

Volume 90 No. 9 September 2007

Medicine Health RHODE ISLAND

PUBLICATION OF THE RHODE ISLAND MEDICAL SOCIETY




Medical Education

What's in a Name???

GOOD - authentic, honest, just, kind, pleasant, skillful, valid

NEIGHBOR - friend, near

ALLIANCE - affiliation, association, marriage, relationship

CORPORATION - company, business establishment

A Good Partner Makes the Difference

It's Official:

The Rhode Island Medical Society's Insurance Brokerage Corporation

has contracted with

The Good Neighbor Alliance Corporation

to provide their members

Employee Benefits



Specializing in Employee Benefits since 1982

Let the Best in the Business Take Care of Your Employee Benefit Needs.

The Good Neighbor Alliance Corporation

1-800-462-1910 or 401-467-2880

www.goodneighborall.com

UNDER THE JOINT
EDITORIAL SPONSORSHIP OF:

The Warren Alpert Medical School of
Brown University
Eli Y. Adashi, MD, Dean of Medicine
& Biological Science

Rhode Island Department of Health
David R. Gifford, MD, MPH, Director

Quality Partners of Rhode Island
Richard W. Besdine, MD, Chief
Medical Officer

Rhode Island Medical Society
Barry W. Wall, MD, President

EDITORIAL STAFF

Joseph H. Friedman, MD
Editor-in-Chief

Joan M. Retsinas, PhD
Managing Editor

Stanley M. Aronson, MD, MPH
Editor Emeritus

EDITORIAL BOARD

Stanley M. Aronson, MD, MPH

Jay S. Buechner, PhD

John J. Cronan, MD

James P. Crowley, MD

Edward R. Feller, MD

John P. Fulton, PhD

Peter A. Hollmann, MD

Sharon L. Marable, MD, MPH

Anthony E. Mega, MD

Marguerite A. Neill, MD

Frank J. Schaberg, Jr., MD

Lawrence W. Vernaglia, JD, MPH

Newell E. Warde, PhD

OFFICERS

Barry W. Wall, MD
President

K. Nicholas Tsiongas, MD, MPH
President-Elect

Diane R. Siedlecki, MD
Vice President

Margaret A. Sun, MD
Secretary

Mark S. Riddlen, MD
Treasurer

Kathleen Fitzgerald, MD
Immediate Past President

DISTRICT & COUNTY PRESIDENTS

Geoffrey R. Hamilton, MD
Bristol County Medical Society

Herbert J. Brennan, DO
Kent County Medical Society

Rafael E. Padilla, MD
Pawtucket Medical Association

Patrick J. Sweeney, MD, MPH, PhD
Providence Medical Association

Nitin S. Damle, MD
Washington County Medical Society

Jacques L. Bonnet-Eymard, MD
Woonsocket District Medical Society

Cover: Photograph, "150 South Main Street" [as written in big letters above the entrance to the headquarters of the RI Attorney General] by Howard Schulman, MD, for his photography website, www.MyRhodeIsland.org

Medicine Health RHODE ISLAND

VOLUME 90 No. 9 September 2007

PUBLICATION OF THE RHODE ISLAND MEDICAL SOCIETY

COMMENTARIES

262 **Graybeards, Or Grayheads**

Joseph H. Friedman, MD

263 **Drink To Me Only With Thine Eyes**

Stanley M. Aronson, MD

CONTRIBUTIONS

SPECIAL ISSUE: Medical Education

Guest Editor: Philip A. Gruppuso, MD

264 **Growing Into Our Vision For an Academic Health Center In Rhode Island: The Impetus of the Warren Alpert Foundation Gift**

Eli Y. Adashi, MD

266 **The Warren Alpert Medical School of Brown University: Class of 2007**

Philip A. Gruppuso, MD, Joanne MacConnell, and Janice Viticone

272 **Redesigning the Medical Science Curriculum at the Warren Alpert Medical School of Brown University**

Sonia Garg, Philip A. Gruppuso, MD, Luba Dumenco, MD

275 **Educating the Next Generation of Leaders In Medicine: The Scholarly Concentrations Program at the Warren Alpert Medical School of Brown University**

Emily Rickards, MA, Jeffrey Borkan, MD, PhD, Philip A. Gruppuso, MD

283 **Reducing the Public Health Burden of Low Vision In the Rhode Island Elderly**

Christina S. Moon, Angela Turalba, MD, Kent L. Anderson, MD, PhD, Edward Feller, MD

COLUMNS

287 **IMAGES IN MEDICINE – Granulomatous Myositis in Association with Chronic Graft vs. Host Disease**

Robert Bagdasaryan, MD, and John E. Donahue, MD

289 **HEALTH BY NUMBERS – Resident and Family Satisfaction with Nursing Home Care in Rhode Island: Differing Views of Performance**

Margaret S. Richards, PhD, and Gwen C. Uman, RN, PhD

291 **GERIATRICS FOR THE PRACTICING PHYSICIAN – Chronic Dizziness In Older Persons**

Aman Nanda, MD, CMD

294 **PHYSICIAN'S LEXICON – The Words of Fear**

Stanley M. Aronson, MD

294 **Vital Statistics**

296 **September Heritage**

Medicine and Health/Rhode Island (USPS 464-820), a monthly publication, is owned and published by the Rhode Island Medical Society, 235 Promenade St., Suite 500, Providence, RI 02908, Phone: (401) 331-3207. Single copies \$5.00, individual subscriptions \$50.00 per year, and \$100 per year for institutional subscriptions. Published articles represent opinions of the authors and do not necessarily reflect the official policy of the Rhode Island Medical Society, unless clearly specified. Advertisements do not imply sponsorship or endorsement by the Rhode Island Medical Society. Periodicals postage paid at Providence, Rhode Island. ISSN 1086-5462. POSTMASTER: Send address changes to *Medicine and Health/Rhode Island*, 235 Promenade St., Suite 500, Providence, RI 02908. Classified Information: RI Medical Journal Marketing Department, P.O. Box 91055, Johnston, RI 02919, phone: (401) 383-4711, fax: (401) 383-4477, e-mail: rjmj@cox.net. Production/Layout Design: John Teehan, e-mail: jteehean@eff.net.



Commentaries

Graybeards, Or Grayheads

It was not long ago that age was supposed to bring wisdom rather than dementia, constipation and incontinence. Patients often sought second opinions from the “graybeards,” the doctors with experience, reflected, presumably, by the whiteness of their hair and beards. Having achieved a partially white beard (Many years ago my daughter remarked, “Oh, daddy, that isn’t sugar in your beard, it’s white hair!”), and a largely white rim around a bare scalp, I now have a graybeard. In fact, one patient commented on it. “My doctor referred me to you for a second opinion because he said you were a ‘graybeard.’ I see now that you really do have a gray beard.”

Until recently there couldn’t be any female counterparts since few women were allowed into medical schools. Now that there are middle-aged women doctors, and soon-to-be aged women doctors, there should be female wizened counterparts! Obviously there can’t be women “graybeards,” but there could be “grayheads” or something more catchy. These days though, women no longer have white hair. It is experience and wisdom that distinguishes the graybeard from “that old fool,” but the white hair, not the wrinkled skin or the dependence on read-

ing glasses, is what has always connoted the “wisdom” of age. Our old TV doctor heroes had white hair but few wrinkles. Our doctor heroines have neither.

What a comment on the society we live in that where men get wiser with age, which is a good thing, women simply get old, which is a bad thing. Why are older women demeaned? Why is it that older men marry “trophy wives,” younger women; but older women don’t mirror that behavior? How many older women are on TV or in movies? How many older women are seen as advisors in the public domain? And even these role models dye their hair. It seems impermissible for women to let their hair turn gray.

The elimination of white hair in older women has occurred with a blinding speed. Certainly many women have been dying their hair for many years, but the development of “easy” to use dyes which are of near-professional quality, and the increasing use of plastic surgery, has made the use of dyes a virtual requirement for middle-aged, older and prematurely gray younger women. Recently a 60 year-old woman I know mentioned that she saw two women with gray hair from a distance and wondered how old they were. She slowly walked by their table, and concluded, with some amaze-

ment, that the two women were actually younger than herself. I am unsure what conclusions she drew from this, but she did report her shock.

There are several issues to consider. One is society’s devaluing of older women. Another is the lag time it takes language to catch up with changing mores. In some cases language precedes social change, which typically occurs when new words enter the vocabulary. It takes longer to eliminate old, outdated words, and sometimes these don’t fall completely out of usage. In medicine we had “simian stoop” for the flexed posture of Parkinson’s disease; “reptilian stare” for the reduced blink rate and masked facial expression; the term “idiot” used initially to describe epileptics, or the amentias of infancy, and later to denote severe retardation. On the other hand, we use the term “wise men” synonymously with “brain trust” or highly competent advisors. Presumably as wise women join wise men in forming advisory panels the term “wise men” will drop in its use. I think that the term “graybeard” has already lost its panache and is little used, but it has not been replaced. It strikes me as a catchy phrase, based, as it is, in an older, more refined time, but it is clear that it is also based in a more discriminatory (in a pejorative sense) time.

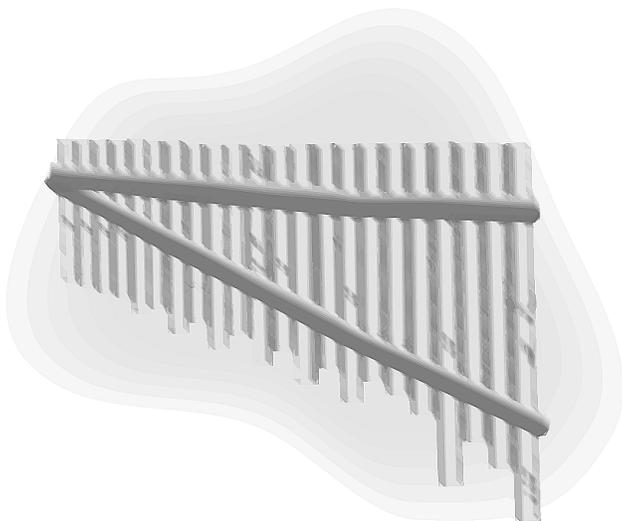
The main problem, as I see it, now that my hair is gray, is that aging confers different images when we describe men and women. Women use “corrective” measures to erase the perceived negative effects of age. They do not get the “boost” that age presumably provides in the way of perceived experience and judgment.

It is surprising then that men are increasingly turning to measures to enhance their youthful appearance as well, perhaps reflecting an increasing tendency to identify advancing age with weakness and incompetence.

— JOSEPH H. FRIEDMAN, MD

Disclosure of Financial Interests

Joseph Friedman, MD, Consultant: Acarta Pharmacy, Ovation, Transoral; Grant Research Support: Cephalon, Teva, Novartis, Boehringer-Ingelheim, Sepracor, Glaxo; Speaker’s Bureau: Astra Zeneca, Teva, Novartis, Boehringer-Ingelheim, Glaxo Acadia; Boehringer-Ingelheim, Sepracor, Glaxo Smith Kline



Drink To Me Only With Thine Eyes

The early years of the 20th Century witnessed a surge of immigration to these shores. Many acclaimed this population growth as an enrichment of the nation's legendary heterogeneity; but others viewed it with horror, believing that these huddled masses were corrupting the native population with unwanted taints of feeble-mindedness while diverging from the ethnicity of the Founding Fathers. One eminent psychologist, H. H. Goddard, believed that feeble-mindedness was solely a heredity quality and he therefore advocated rigorous screening of immigrants to prevent morons from entering the country. For those mentally challenged already here, he recommended institutionalization to prevent them from further breeding [since they “. . . would produce more feeble-minded children with which to clog the wheels of human progress.”].

To strengthen his case that mental defectiveness is virtually always inherited, Goddard, a fervent eugenicist, traced an American family [which he renamed the Kallikaks] descending from a “feeble-minded tavern wench” in the late 18th Century. Many of her descendants were living in utter poverty in the Pine Barrens of New Jersey. He determined feeble-mindedness solely by visual inspection of the children. [“Three children, scantily clad and with shoes that would barely hold together, stood about with drooping jaws and the unmistakable look of the feeble-minded.”] And he used these people, beset by poverty and alcoholism, as proof of the hereditary nature of mental incompetence.

Decades later, a number of medical scientists reviewed the photographs of the Kallikak children and were impressed with their resemblance to a heretofore unrecognized perinatal syndrome described in 1873 by Kenneth Jones and David Smith from the University of Washington. They called their newly assembled group of signs and symptoms the “Fetal Alcohol Syndrome.”

This new syndrome is characterized by the following clinical elements: stunted fetal growth, low birth weight, failure to thrive, characteristic facial stigmata, serious brain damage associated with disorganization of neural architecture, and enduring mental, physical and behavioral abnormalities. This syndrome is a consequence of women drinking alcohol during their pregnancy. Exposure of the fetus to alcohol is now regarded as the leading cause of mental retardation in the Western world. In the words of one government brochure: “When a pregnant woman drinks alcohol, so does her unborn baby.”

The visual characteristics of these afflicted infants include the following: the head is smaller in diameter than normal; the width of the eyelids is markedly reduced; the cheek bones are flattened, the groove between the nose and the upper lip is smoothed or obliterated; and the upper lip is markedly thinned.

These children present dramatic retardation in growth and

development. They have problems with walking, deafness, poor coordination, sensory losses and frequent seizures. These neurological deficits are often accompanied by abnormalities of the heart and other organs, but the overwhelming damage is within the nervous system.

As these affected children age, their problems in adapting to society seem to increase. These newer problems include poor memory retention, insuperable learning difficulties, impoverished problem-solving capabilities and impulsive and antisocial behavior.

How much alcohol is needed to cause the fetal alcohol syndrome? This threshold has not been determined since each woman processes the intake of alcohol differently; therefore it is recommended that pregnant women avoid any contact with beer, wine or liquor. Alcohol easily passes through the placental barrier, and the fetus has fewer metabolic means by which to eliminate alcohol. Accordingly, alcohol lingers longer in the fetal body.

How common is this tragic syndrome? Epidemiologists now believe that it arises in about two newborns per 1,000 births, but that it is more frequent in the offspring of African-American and Native-American parents, probably caused by a selective genetic fetal vulnerability to alcohol.

The relationship between maternal alcohol consumption and irreversible damage to the fetal nervous system has been amply verified in tests performed on experimental animals. The syndrome has also been observed before 1973 in isolated reports. And even in classical documents from ancient Greece, the advice was offered that husbands should avoid wines lest it will lead to the birth of a female child, an event considered to be unfortunate.

The Bible first mentions wine in the story of Noah. While the fruit of the vine is unabashedly celebrated, the Scriptures are not unaware of the dangers of alcoholic beverages. Genesis, for example, is not shy in describing the effects of excessive wine consumption by Noah. And Proverbs [20:1] declares: “Wine is a mocker, strong drink is raging; and whosoever is deceived thereby is not wise.” Indeed, Proverbs advocates that strong drink be reserved solely for those about to die or those with heavy hearts [31:6].

But does the Bible speak to the newly described fetal alcohol syndrome? Perhaps yes. In the Book of Judges [13: 1-24] we learn that the wife of a man named Mahoah was barren. An angel of the Lord appeared and spoke to the wife: “Now therefore beware, I pray thee, and drink not wine or strong drink, and eat not any unclean thing.” And further, promised the angel, “Thou shalt conceive.” And later, “The woman bare a son, and called his name Samson. And the child grew and the Lord blessed him.”

– STANLEY M. ARONSON, MD

Add: Disclosure of Financial Interests

Stanley M. Aronson, MD, has no financial interests to disclose.

Growing Into Our Vision For an Academic Health Center in Rhode Island: The Impetus of the Warren Alpert Foundation Gift

Eli Y. Adashi, MD

You will become...as great as your dominant aspiration.

— William James

Three years ago, the Division of Biology and Medicine at Brown committed its energies and resources to a comprehensive plan for growth designed to strengthen medical education, expand our programs in biology and public health, and revitalize our crucial relationships with our teaching hospital partners, all by 2010.

The overarching purpose of this investment was for the University and the Medical School to play a more effective role than ever in the education of scientists and physicians of outstanding ability and potential, to augment focus and depth in the local research environment, and to contribute increasingly to the nature and quality of clinical practice locally and globally. A natural corollary of this vision was the goal of propelling the Medical School into the top twenty-fifth percentile of the nation's institutions of academic medicine.

By the end of 2006, we could claim considerable progress toward realizing the ambitious goals of the comprehensive plan. We had been steadily expanding our biomedical faculty, had begun increasing the size of our medical school classes, had secured a new home for our burgeoning Program in Public Health, had inaugurated new research and teaching facilities in Sidney Frank Hall for Life Sciences on our campus and opened the Laboratories for Molecular Medicine in the Jewelry District; we were seeing an acceleration in the development of multidisciplinary collaborations both on our campus and beyond it, and we had begun restructuring our agreements with our hospital partners to support closer and more fruitful relationships in research, teaching, and clinical care.

As 2007 began, our efforts were catalyzed by an extraordinary act of philanthropy. A gift of \$100 million from the

Warren Alpert Foundation brought many of our most critical goals into closer reach. This influx of support, which will be awarded incrementally over the next several years, has already increased the momentum of our efforts, and dramatically so.

A NEW NAME, A NEW HOME

A change of designation to The Warren Alpert Medical School of Brown University was made to permanently acknowledge the magnitude of Mr. Alpert's gift and its anticipated impact on the future strength and stature of our program. A new Medical School logo was introduced this summer to reflect the new name, to perpetuate the proud history, and to represent the certain potential of academic medicine at Brown.

The most visible result of the gift of the Warren Alpert Foundation will be a new home and campus for the Medical School, for the first time providing a unifying center around which our hospital-based initiatives can revolve. The building will physically represent the Warren Alpert Medical School in the eyes of the community. In the new building's classrooms and laboratory facilities, which will include an anatomy lab and perhaps a simulation center, forward-looking technologies will support innovative approaches to teaching. The building will bring administrative offices together with a variety of purposefully designed instructional spaces under one roof to better meet the needs and consolidate the focus of the Medical School community, from first-years to residents, fellows, and faculty.

GROWTH IN FACULTY AND STUDENT BODY

The Alpert gift is accelerating our efforts to recruit and retain outstanding faculty members, both directly, by making more positions and better research support available, and indirectly, by enhancing the environment for research

and teaching. Our unified faculty teaches students on all levels, in the undergraduate College and the Medical School, as well as in other graduate programs, so skill and devotion to teaching are essential in those we hire. We are very pleased with our success to date in attracting new faculty members who bring the requisite mix of commitment to teaching and accomplishment in research.

As we expand faculty numbers and provide increasingly effective faculty support, we keep our commitment to diversity in sharp focus. We remain committed to gender equity and to promoting the academic advancement of our women faculty to the highest senior ranks and leadership positions. Our Office of Women in Medicine helps advance the mission of fostering the academic progress of women faculty, residents, fellows and students through education, advocacy, mentoring and networking. In the course of the past year, we collaborated with our colleagues at Women & Infants Hospital to present a highly regarded professional development series and conference addressing such themes as leadership and institutional transformation. In the coming year, we plan to launch the Dean's Award for the Advancement of Women Faculty to recognize a leader within the Medical School who has demonstrated a commitment to the recruitment, retention and advancement of women faculty.

We also remain committed to racial and ethnic diversity among our students. The **Program in Liberal Medical Education (PLME)**, our 8-year combined undergraduate/medical education program, has had exceptional success in bringing a diverse population of students to the medical school. While striving to continue the success of the PLME in this area, we are committed to augmenting the diversity of our student body as we pursue the standard admissions route as a primary means of attracting students to the Warren Alpert Medical School.

In the next three years, our medical student body is slated to increase by one third. Today, several years after the inauguration of a need-blind admission policy, 75% of our medical students receive financial aid. As class sizes increase, and we seek to engage the most talented students among our applicants, we anticipate welcoming still greater numbers students with financial need. The Alpert gift has already begun to increase the number of scholarships we can make available.

INNOVATION IN TEACHING

Curricular change is another area in which the pace of the work we had begun is increasing thanks to Alpert Foundation support. Brown has prided itself for decades on placing responsibility for planning their undergraduate programs directly into the hands of students. Our new medical curriculum is putting this concept into practice to a degree unprecedented in our medical school's history, opening the way for students to focus on their areas of interest earlier and more intensively than ever.

Among recent innovations is the new scholarly concentrations program, which offers students the opportunity to pursue intellectual interests beyond core medical studies through independent cross-disciplinary research projects of significant scholarly value. Nearly a dozen concentration areas are now available to our medical students, from Advocacy and Activism to Informatics, and from Contemplative Studies to Women's Reproductive Health, Freedom and Rights.

The Doctoring Program we initiated last year engages first and second-year medical students in community practice with faculty mentors in clinics, emergency rooms, and private offices. The program has made a wonderfully productive and encouraging start, thanks largely to the many physician volunteers who have introduced our students to the world of clinical medicine with such careful attention and capable guidance.

NEW DIRECTIONS

A number of initiatives that have important implications for research and practice locally and globally are flourishing on campus. Our Program in Public Health—with its focus on crossing the borders of disciplines to address crucial national and international health and

policy issues, with its appeal to students increasingly interested in social change, and with its competitiveness in the arena of research funding—has been growing rapidly. It is so robust, in fact, that we are making plans to establish an accredited Brown school of public health.

The sequencing of the human genome has swept computational molecular biology, genomics and proteomics into prominence. At Brown, we have made significant investments in building expertise in these areas and in providing facilities to support investigation into the molecular basis of disease. Faculty, graduate students and postdoctoral trainees are all partners in this enterprise. The Division's unique meld of basic science and medicine facilitates innovative and multidisciplinary approaches and collaborations between basic scientists and physicians. We anticipate a growing presence of Brown researchers in the emerging field of personalized medicine, as molecular analysis enters the medical mainstream.

HIGHER PURPOSES

All these changes are designed to encourage the development of physicians who can function brilliantly in clinical and research settings, who are enlightened scientists and fully-realized human beings, who are skilled in the bioinformatics technologies of the present and prepared to adopt those that are continually emerging, familiar with complementary healing traditions, focused on patients and committed to service, equipped to navigate the nation's health care system, and willing and able to advocate for health care quality and patient safety.

This goal is a lofty one, but the Warren Alpert Medical School is making great efforts to put it within reach of every student who trains with us. These efforts include a wave of construction of new laboratories and classroom buildings, burgeoning support for research, re-designed collaborations with our seven teaching hospital partners, and the introduction of new academic and research programs. The latter category includes a number of new centers and programs designed to coordinate and advance both longstanding and emerging efforts in areas such as AIDS research, children at risk, vision research, and recovery from trauma.

The Alpert gift is, without doubt, a tremendous catalyst. Together with our traditional funding sources, including the gifts of alumni and friends, and growing external funding for our increasingly focused research programs, this extraordinary gift can position our Medical School, and the medical community that gives it context and continuity, for unprecedented achievement in the years and decades ahead.

We are well on our way. This spring, our Medical School's research ranking in *U.S. News and World Report* rose nine points, to place us at 34th in the nation, just two points away from breaking into the top 25%. I have every confidence that all the important indicators will bear out our progress as we move forward.

We have a great deal to anticipate and to experience together. I consider it a privilege to participate in this unique moment of growth and promise.

Eli Y. Adashi, MD, is Dean of Medicine and Biological Sciences.

CORRESPONDENCE

Eli Y. Adashi, MD
The Warren Alpert Medical School of Brown University
Box G-A1
Providence, RI 02912

DISCLOSURE OF FINANCIAL INTERESTS

Eli Y. Adashi, MD, has no financial interests to disclose.



The Warren Alpert Medical School of Brown University: Class of 2007

Philip A. Gruppuso, MD, Joanne MacConnell, and Janice Viticonte

On May 27, 2007, 93 men and women received the Doctor of Medicine degree from Brown University: the 33rd class of physicians graduated from that institution since 1975. Of the 2,577 physician graduates of previous classes, approximately 15% are currently licensed to practice medicine in Rhode Island. The purpose of this article is to introduce the graduates of the Warren Alpert Medical School Class of 2007 to the physician community in Rhode Island, as many will be your professional colleagues.

A PORTRAIT OF THE CLASS OF 2007

Of the 93 graduates, 33 were men (35%) and 60 were women (65%). The demographic characteristics and racial/ethnic composition of the MD Class of 2007 are shown in Table 1. The proportion of students from Caucasian American and Asian American backgrounds is the same as in the previous year (47% and 27%, respectively). Nineteen percent of the graduates are members of minority groups underrepresented in medicine (15 African Americans and 3 Mexican Americans) as defined by the Association of American Medical Colleges (AAMC). This number is the same as the 19% underrepresented minorities (URM) reported for last year's graduates. The proportion of URM students among all four years of Brown medical students is 19%.

Seventeen graduates are residents of Rhode Island. They came from eleven different communities in the state, with four students from Providence.

The largest proportion of students in the MD Class of 2007 continues to come from Brown's Program in Liberal Medical Education (PLME): 50 of the graduates (54%) came through that route. Another cohort (sixteen graduates; 17%) came through the combined Brown-Dartmouth Medical Education Program in which students spend their first two years of medical school at Dartmouth, and transfer to Brown for the final two years.

Shortly after the PLME was inaugurated, the medical school entered into special agreements with postbaccalaureate premedical programs at Bryn Mawr College and Columbia University. Students from these pro-

grams decided upon a career in medicine only after completing college. Students have typically been engaged in other careers for several years. The goals in establishing this new route of admission were to maintain a rich diversity in

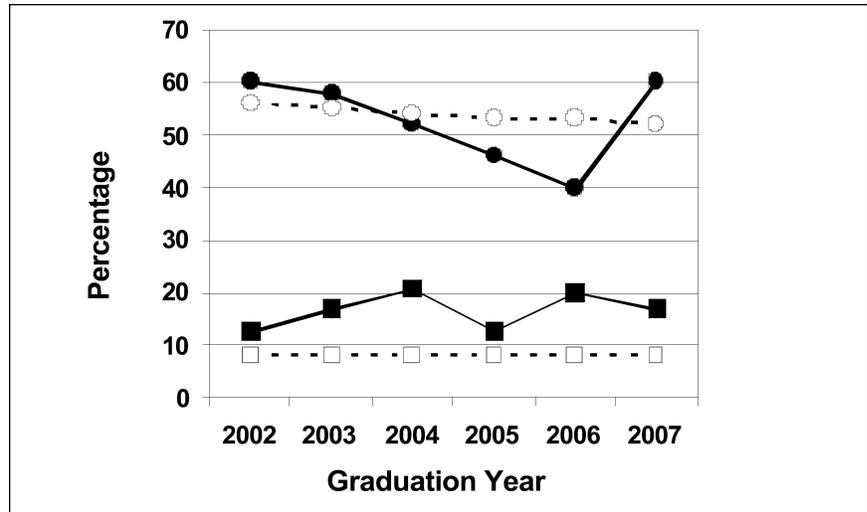


Figure 1. Recent trends in residency matching. The percentage of students matching in combined primary care disciplines is shown for graduates of the Alpert Medical School (filled circles) and for all U.S. medical school graduates (unfilled circles). Similarly, data for combined surgery plus surgical specialties are shown for graduates of the Alpert Medical School (filled squares) and for all U.S. medical school graduates (unfilled squares).

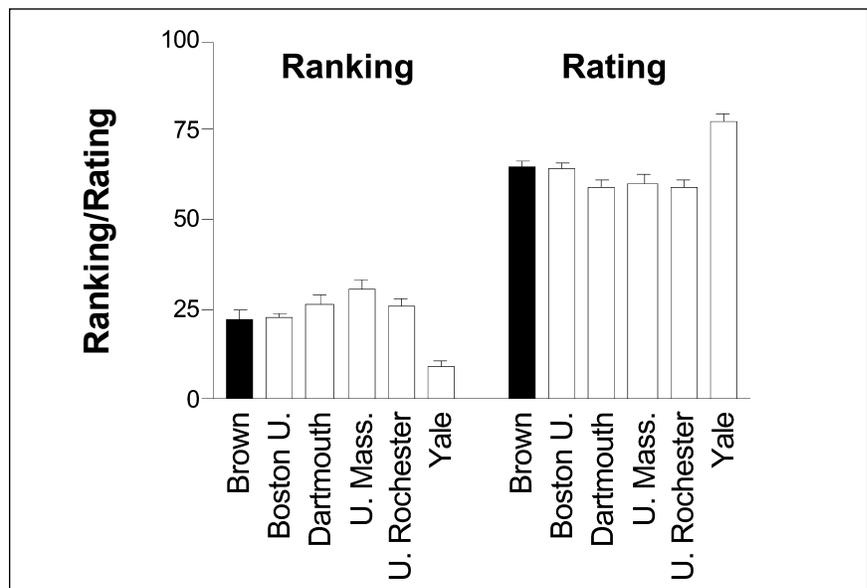


Figure 2. An assessment of the quality of residency programs at which Alpert Medical School graduates have matched. All students at Brown and selected other institutions who matched with programs affiliated with U.S. medical schools were included in the analysis. "Ranking" refers to the place in the U.S. News 2007 rank order list. Rating refers to the scale applied to these same medical schools (maximum of 100). Data are shown as mean + 1 standard deviation.

Sex			
	Male	33	35%
	Female	60	65%
Race			
	Caucasian American	44	47%
	Asian American	25	27%
	African American	15	16%
	Mexican American	3	3%
	Other Hispanic	2	2%
	Foreign National	4	4%
State of Residence			
	California	8	9%
	Florida	2	2%
	Illinois	2	2%
	Louisiana	2	2%
	Maryland	5	5%
	Massachusetts	3	3%
	New Hampshire	3	3%
	New Jersey	6	6%
	New York	14	15%
	North Carolina	2	2%
	Oregon	3	3%
	Pennsylvania	4	4%
	Rhode Island	17	18%
	Texas	5	5%
	Virginia	2	2%
	Other States	10	11%
	Other Countries	5	5%

Table 1. Demographic Characteristics of the Alpert Medical School Class of 2007.

Specialty Choice	2007		2006		2005		2004		2003		2002	
	No.	%										
Primary Care, Total	47	50%	34	38%	32	44%	41	47%	47	57%	44	59%
Internal Medicine, Total	19	20%	17	19%	16	22%	20	23%	18	22%	21	28%
Categorical Med	16	17%		0%	10	14%	15	17%	16	19%	16	21%
Primary Care	3	3%		0%	6	8%	5	6%	2	2%	5	7%
Pediatrics	13	14%	9	10%	4	5%	6	7%	11	13%	13	17%
Family Medicine	8	9%	5	6%	7	10%	9	10%	11	13%	8	11%
Medicine/Pediatrics	4	4%	1	1%	2	3%	4	5%	0	0%	2	3%
Obstetrics & Gynecology	3	3%	2	2%	3	4%	2	2%	7	8%	1	1%
Surgery	6	6%	9	10%	3	4%	4	5%	4	5%	4	5%
Surgical Subspecialties, Total	8	9%	10	11%	6	8%	12	14%	10	12%	6	8%
Ophthalmology	0	0%	2	2%	3	4%	5	6%	1	1%	2	3%
Orthopedics	3	3%	4	4%	2	3%	3	3%	5	6%	1	1%
Neurosurgery	0	0%	1	1%			0	0%	1	1%	0	0%
Urology	2	2%	1	1%	1	1%	1	1%	1	1%	2	3%
Plastic Surgery	1	1%	0	0%			1	1%	2	2%	1	1%
Otorhinolaryngology	2	2%	2	2%			23	26%	0	0%	0	0%
Dermatology	4	4%	5	6%	5	7%	1	1%	1	1%	1	1%
Emergency Medicine	3	3%	7	8%	3	4%	4	5%	4	5%	3	4%
Psychiatry	8	9%	5	6%	4	5%	4	5%	3	4%	5	7%
Neurology	1	1%										
Transitional & Preliminary Medicine *	7	8%	0	0%	1	1%	2	2%	3	4%	2	3%
Institutional Specialties, Total	7	8%	9	10%	9	12%	10	11%	4	5%	4	5%
Anesthesiology	3	3%	2	2%			3	3%	1	1%	1	1%
Pathology	0	0%	1	1%			0	0%	0	0%	0	0%
Rehabilitation Medicine	0	0%	0	0%			1	1%	0	0%	0	0%
Radiology & Rad Oncology	4	4%	6	7%	9	12%	6	7%	3	4%	3	4%
Delaying Residency	2	2%	9	10%	9	12%	0	0%	4	5%	4	5%
Not Entering Medicine	0	0%					0		2	2%	0	0%
Totals	93	100%	89	100%	73	100%	87	100%	83	100%	75	100%

Table 2. Specialty Choices for the Warren Alpert Medical School Classes of 2002–2007.

the student body by admitting older students who had different academic and life experiences as well as rounding out the total class size to compensate for the expected attrition from the PLME. Nine members (10%) of the class were postbaccalaureate students: three from Bryn Mawr College and six from Columbia University.

Among the remainder of the class, six students were part of the **Early Identification Program (EIP)**: three from Tougaloo College, and three from the University of Rhode Island. EIP students are offered provisional admission to the medical school during their sophomore year at their respective undergraduate colleges. Of the remaining graduates, two entered medical school through the MD/PhD program, and two through advanced transfer.

Brown University was the most common undergraduate college (62 graduates). The University of Rhode Island came next with five class members, followed by Tougaloo (3 graduates) and the University of Pennsylvania (2 graduates).

The most common undergraduate

major (48%) among the class members was biology (including subdisciplines such as biochemistry, neural sciences, and microbiology). Science majors taken together (including psychology) accounted for 19% of all majors, while 15% of majors were in the humanities and 18% in the social sciences. Among the humanities majors, religious studies was the most common choice, while sociology and economics were the most popular choices among those majoring in the social sciences. Nine students double-majored.

WHERE THEY ARE GOING

The career choices made by the Class of 2007 showed an unexpected but gratifying trend in that selection of primary care disciplines, which had been declining over the past four years, neared the same level achieved in 2002. (Figure 1) The proportion of students matching in the primary care areas (internal medicine, pediatrics, med/peds, family medicine, and obstetrics/gynecology) totaled 50%, approximating the national figure.¹

Internal medicine remained the most frequently selected specialty (19 stu-

dents). There was a marked increase in pediatrics, 13 students. The increase in students choosing primary care disciplines was associated with a modest decrease in those choosing surgery and the surgical specialties. However, this decline in the latter was not sufficient to explain the change in primary care. Rather, the increase was largely accounted for by a decrease in the number of students choosing to delay residency. The change in primary care could not be attributed to any curricular or advising/mentoring changes in the medical school.

Table 2 shows the number of students selecting the various categories of residency programs.

Table 3 lists the Class of 2007 graduates and their residency programs. Of the 93 graduates who will enter residency training next year (2 are delaying their residencies, 13 graduates matched with Brown-affiliated programs and will be staying in the state. Massachusetts is the most popular state for residency, becoming home for 18 graduates next year. The second most popular state for residency is tied between Rhode Island and New

Name	Facility	Affiliated Medical School	Specialty
Sarah Atunah-Jay	Children's Hospital and Clinics	University of Minnesota Medical School	Pediatrics
Shani Belgrave	University of Maryland	University of Maryland Medical Center	Surgery
Marisa Kastoff Blitstein	Rhode Island Hospital	The Warren Alpert Medical School of Brown University	Radiology
	Caritas Carney Hospital, Massachusetts	Caritas Carney Hospital	Internal Medicine (Prelim)
Nancy Brim	Brigham & Women's Hospital	Harvard Medical School	Internal Medicine—Primary
Suzette Brown	Duke University Hospital	Duke University Medical Center	Pediatrics
Helen Burbank-Schmitt	Group Health Cooperative	Virginia Mason Medical Center	Family Practice
Vincent Capaldi	Walter Reed Army Medical Center	Walter Reed Army Medical Center	Internal Medicine—Psychiatry
Sheree Carney	University Hospitals	University of Mississippi School of Medicine	Family Practice
Tamara Chang	University of Massachusetts Medical School	University of Massachusetts Medical School	Med/Peds
Victoria Chiu	Rhode Island Hospital	The Warren Alpert Medical School of Brown University	Internal Medicine (Prelim)
Sora Chung	University Hospital	University of Cincinnati College of Medicine	Emergency Medicine
Emily Clarke-Pearson	Beth Israel Medical Center	Albert Einstein College of Medicine	Surgery
Stacy Croteau	Boston Children's Hospital	Harvard Medical School	Pediatrics
Sarah Denucci	Rhode Island Hospital	The Warren Alpert Medical School of Brown University	Internal Medicine
Darpun Dhawan	Mt. Sinai Hospital	Mt. Sinai School of Medicine	Internal Medicine
Kristan Diaz	Christus Spohn Memorial Hospital, Texas	Christus Spohn Memorial Hospital	Family Practice
Melissa Donovan	Christiana Care—Health Services Program, Delaware	Christiana Care—Health Services Program	Surgery
Robert Dyer	Rhode Island Hospital	The Warren Alpert Medical School of Brown University	Dermatology
	Rhode Island Hospital	The Warren Alpert Medical School of Brown University	Internal Medicine (Prelim)
Akita Evans	Carolinas Medical Center, Charlotte, North Carolina	Carolinas Medical Center, Charlotte, North Carolina	Family Practice
Shahida Farooqi	Cedars-Sinai Medical Center, California	Cedars-Sinai Medical Center	Internal Medicine
Lauren Geller	Mt. Sinai Hospital	Mt. Sinai School of Medicine	Pediatrics—Primary
Vincent Harisaran	Rhode Island Hospital	The Warren Alpert Medical School of Brown University	Surgery (Prelim)
Sophy Hernandez	Loyola University Medical Center, Illinois	Loyola University Medical Center	Radiation Oncology
	Roger Williams Medical Center	Roger Williams Medical Center	Internal Medicine (Prelim)
Nicole Herschenhous	Cambridge Hospital	Harvard Medical School	Psychiatry
Goretti Ho	University of Southern California	LAC & USC Medical Center	Plastic Surgery
Charlene Hooper	Yale-New Haven Hospital	Yale Medical School	Ob/Gyn
Andrew Horowitz	Case Western Reserve University	University Hospitals of Cleveland Program	Urology
	Case Western Reserve University	University Hospitals of Cleveland Program	Surgery (Prelim)
Omar Hyder	Rhode Island Hospital	The Warren Alpert Medical School of Brown University	Internal Medicine
Niama Jacobs	Cambridge Hospital	Harvard Medical School	Psychiatry
Jared Jagdeo	Maimonides Medical Center	SUNY Health Sciences Center	Internal Medicine (Prelim)
Judy Jang	Barnes-Jewish Hospital, Washington University	St. Louis School of Medicine	Internal Medicine
Jennifer Jenkins	Rhode Island Hospital	The Warren Alpert Medical School of Brown University	Dermatology
	Rhode Island Hospital	The Warren Alpert Medical School of Brown University	Internal Medicine (Prelim)
Robbie Jefferson Joseph	Rhode Island Hospital	The Warren Alpert Medical School of Brown University	Psychiatry

Table 3. Residency positions for members of the Warren Alpert Medical School Class of 2007.
(Continued on next two pages.)

Name	Facility	Affiliated Medical School	Specialty
Eden Kahle	Children's Hospital	University of Pennsylvania	Pediatrics
Roy Kao	Christiana Care—Health Services Program, Delaware	Christiana Care—Health Services Program	Med/Peds
John Kelleher	UCLA Semel Institute for Neuroscience	UCLA	Psychiatry
Daniel Kelly	New York Presbyterian Hospital	Weill Cornell Medical Center	Pediatrics
Clara Kim	University of Massachusetts Medical School	University of Massachusetts Medical School	Adult/Child Psychiatry
Esther Kim	University of Iowa Hospitals and Clinics Program	University of Iowa Hospitals and Clinics Program	Anesthesiology
Ivone Kim	University of Pittsburgh Medical Education Program	Children's Hospital of Pittsburgh	Pediatrics
Pebble Kranz	Strong Memorial Hospital	University of Rochester	Family Practice
Michael Kurtz	Massachusetts General Hospital	Harvard Medical School	Surgery
Sheila Lahijani	Rush University Medical Center, Illinois	Rush University Medical Center	Med/Psychiatry
Joseph K Lee	New York Presbyterian Hospital	Columbia University Medical Center	Orthopedic Surgery
Carly Levy	DuPont Children's Hospital	Thomas Jefferson University	Pediatrics
Jae Loon Lim	University of Washington Program	University of Washington School of Medicine	ENT
Eugene Liu	Tufts_New England Medical Center	Tufts_New England Medical Center	Internal Medicine
Monica Lucero	University of Massachusetts Medical School	University of Massachusetts Medical School	Ob/Gyn
Stewart Mackie	Rhode Island Hospital	The Warren Alpert Medical School of Brown University	Pediatrics
Mariuxi Manukyan	Indiana University School of Medicine	Indiana University School of Medicine	Surgery
Robert Markelewicz	Tufts_New England Medical Center	Tufts_New England Medical Center	Radiation Oncology
	Roger Williams Medical Center	Roger Williams Medical Center	Internal Medicine (Prelim)
Terrisa Martin-Hanley	Winthrop—University Hospital Program	Winthrop—University Hospital	Ob/Gyn
Cameron McClure	University of California (Davis)	University of California Davis Medical Center	Emergency Medicine
Benjamin Mega	Monmouth Medical Center, New Jersey	Monmouth Medical Center	Surgery
Maricruz Merino	Brigham & Women's Hospital	Harvard Medical School	Internal Medicine—Primary
Fernando Moreno	Jamaica Hospital Medical Center	Mt. Sinai Medical School	Family Practice
Mithun Nallari	Albert Einstein College of Medicine	Montefiore Medical Center	Internal Medicine
Surena Namdari	Hospital of the University of Pennsylvania	Hospital of the University of Pennsylvania	Orthopedic Surgery
Judy Nee	Boston University Medical Center	Boston University Medical Center	Internal Medicine
Sinh Nguyen	Massachusetts General Hospital	Harvard Medical School	Anesthesiology
	Salem Hospital	North Shore Medical Center	Internal Medicine (Prelim)
James Page	Great Plains Medical Foundation	Deaconess Hospital	Family Practice
Madhavi Parekh	New York Presbyterian Hospital	Columbia University Medical Center	Internal Medicine
Amanda Gruber Powell	Beth Israel Medical Center	Harvard Medical School	Internal Medicine
Ido Preis	Boston University Medical Center	Boston University Medical Center	Internal Medicine
Adam Rojan	Hospital of the University of Pennsylvania	Hospital of the University of Pennsylvania	Internal Medicine
Shane Ruter	Boston University Medical Center	Boston University Medical Center	Emergency Medicine
	Rhode Island Hospital	The Warren Alpert Medical School of Brown University	Internal Medicine (Prelim)
Natasha Rybak	Rhode Island Hospital	The Warren Alpert Medical School of Brown University	Med/Peds
Leena Sastry	St. Louis Children's Hospital	Washington University	Pediatrics
David Sears	New York Presbyterian Hospital	Columbia University Medical Center	Internal Medicine—Primary
Shideh Shafie	Rhode Island Hospital	The Warren Alpert Medical School of Brown University	Urology
	Rhode Island Hospital	The Warren Alpert Medical School of Brown University	Surgery (Prelim)

Name	Facility	Affiliated Medical School	Specialty
Ikue Shimizu	Rhode Island Hospital	The Warren Alpert Medical School of Brown University	Dermatology
	Rhode Island Hospital	The Warren Alpert Medical School of Brown University	Internal Medicine (Prelim)
Janet Shu	Mt. Auburn Hospital_Longwood	Harvard Medical School	Psychiatry
Laura Simon	University of Pittsburgh Medical Center	University of Pittsburgh Medical Center	Med/Peds
Jodie Skrzat	National Naval Medical Center	National Naval Medical Center	Transitional
Catherine Smith	University of Maryland Medical Center	University of Maryland Medical Center	Internal Medicine
Eboni Smith	Providence Hospital	Georgetown University	Family Practice
Andrew Taitano	Rhode Island Hospital	The Warren Alpert Medical School of Brown University	Surgery (Prelim)
Ani Tajirian	UMDNJ—New Jersey Medical—Newark	UMDNJ—New Jersey Medical—Newark	Dermatology
	Rhode Island Hospital	The Warren Alpert Medical School of Brown University	Internal Medicine (Prelim)
Sarah Taylor	New York Presbyterian Hospital	Columbia University Medical Center	Internal Medicine
Janell Thompson	University of Arkansas College of Medicine	Medical Sciences Program	Pediatrics
Tara Tredennick	Emory University Program	Emory University School of Medicine	Radiology
	Mercy Hospital of Pittsburgh	Mercy Hospital of Pittsburgh	Transitional
Peter Vezeridis	Massachusetts General Hospital	Harvard Medical School	Orthopedic Surgery
Courtney Voelker	Barnes-Jewish Hospital	Washington University	ENT
Terence Wallace	Hospital of the University of Pennsylvania	Hospital of the University of Pennsylvania	Anesthesiology
	New York Presbyterian Hospital	Columbia University Medical Center	Internal Medicine (Prelim)
Elizabeth Wallis	Children's Hospital	University of Pennsylvania	Pediatrics
Elizabeth Won	New York Presbyterian Hospital	Cornell Medical Center	Internal Medicine
Jennifer Yates	Johns Hopkins Hospital	Johns Hopkins School of Medicine	Internal Medicine
Warren Young	New York Presbyterian Hospital	Weill Cornell Medical Center	Pediatrics
James Zimmerman	Stanford University Program	Stanford Hospital and Clinics	Neurology
	Boston University Medical Center	Boston University Medical Center	Internal Medicine (Prelim)

State	Number	Percentage
Arkansas	1	1%
California	5	5%
Connecticut	1	1%
Delaware	2	2%
Georgia	1	1%
Illinois	2	2%
Indiana	1	1%
Iowa	1	1%
Minnesota	1	1%
Mississippi	1	1%
Missouri	3	3%
Maryland	5	5%
Massachusetts	18	19%
New Jersey	2	2%
New York	15	16%
North Carolina	2	2%
Ohio	2	2%
Oklahoma	1	1%
Pennsylvania	7	8%
Rhode Island	15	16%
Texas	1	1%
Washington	2	2%
Washington, DC	2	2%
*Students delaying	2	2%
Total	93	100%

Table 4. Where graduates are going for PGY1 residency positions.

York, each with 15 graduates. Pennsylvania is the third top choice for residency with 7 graduates.

Table 4 lists those states where the graduates will be going for their first year of residency training. Seventy-two percent of the class will stay in the Northeast, a 37% increase from the previous class. Eight percent of graduates will go to the West Coast, down 15% from last year.

We were interested in analyzing the quality of the residency programs that our students will be entering. Such an analysis is difficult to perform since graduate medical education programs are not ranked. However, most of the programs our students will be entering are

affiliated with medical schools. The *U.S. News & World Report* ranking of Top Medical Schools offers a potential metric to assess the quality of residency matches. Results of such an analysis (*Figure 2*) indicate that the Warren Alpert Medical School graduates matched at programs that are comparable in quality to those of students at a number of peer institutions, including Boston University, the University of Massachusetts, Dartmouth and the University of Rochester. Yale University, also included for comparison, shows students matching at programs affiliated with higher ranking and higher rated medical schools. While the analysis should be interpreted with great caution, it seems to demonstrate that our medical students are ranking at residency programs that are of high quality. In a related analysis (not shown), we found that no significant longitudinal changes in the metric for the 2004 through 2007 graduating classes.

CONCLUSION

The proportion of Brown medical graduates entering primary care residencies showed a marked but unexplained increase this past year. Other trends were similar to those demonstrated by recent past graduating classes. An analysis of the quality of the programs in which our students matched, one that should be interpreted cautiously, indicates quality consistent with a number of our peer institutions.

REFERENCES

1. *National Resident Matching Program*, 2007 Match Data (obtained at <http://www.nrmp.org/>. Accessed June 19, 2007.)
2. *U.S. News & World Report*, Top Medical Schools (at http://www.usnews.com/usnews/edu/grad/rankings/med/brief/mdprank_brief.php.)

Philip A. Gruppuso, MD, is the Associate Dean for Medical Education and Professor of Pediatrics.

Joanne MacConnell is Executive Assistant to the Associate Dean for Medical Education.

Janice Viticone is the Medical Student Residency Program Coordinator.

All are with the Warren Alpert Medical School of Brown University.

Disclosure of Financial Interests

Philip A. Gruppuso, MD, Joanne MacConnell, and Janice Viticone have no financial interests to disclose.

CORRESPONDENCE:

Philip A. Gruppuso, MD
The Warren Alpert Medical School of Brown University
Box G-A218
Providence, RI 02912
phone: (401) 863-1618
e-mail: Philip_Gruppuso@Brown.edu

FALLON & HORAN DO
Inc.
FAMILY PHYSICIANS
seek BE/BC Family
Physician, full time, 2 office
locations. Affiliated with
Kent County and Rhode
Island Hospitals. Salary plus
incentive; pension, mal-
practice & health insurance.

Send CV attention
Dr. Horan
401-784-6714

You have big plans for
your practice. We have the
capabilities to match.

- Commercial Loans
- Commercial Real Estate
- Cash Management
- Wealth Management
- Personal Banking



As the largest Rhode Island-based bank, Washington Trust is an outstanding resource for medical professionals. Whether you are starting your practice, looking to expand, or planning to sell, we can help you achieve your goals. To learn more, call us at 401-348-1200 or visit us online at www.washtrust.com/bizbank.


Good things start here.™

Member FDIC

Redesigning the Medical Science Curriculum at the Warren Alpert Medical School of Brown University

Sonia Garg, Philip A. Gruppuso, MD, Luba Dumenco, MD

The story of medical education at Brown

University is one of striving for innovation, promoting scientific discovery to improve health, and preparing physicians to improve the world. In planning for the arrival of the Class of 2010, Brown launched a major redesign of the pre-clerkship curriculum with the goal of achieving an integrated, contemporary course of study that would be consistent with these guiding principles. The redesign process began with a review of the existing content as well as an examination of the curricula at other medical schools. By encouraging collaboration between students, faculty and administration, we undertook the potentially contentious process of redesign while taking advantage of the great student initiative and interest that exists here at Brown.

Curricular changes have been aimed at promoting intellectual integration of the basic sciences with clinical medicine. At the center of the initial effort was realigning curricular content in a logical, sequential fashion, based on educational goals rather than departmental logistics. An important aspect of this goal was early clinical exposure afforded to students via a newly developed two-year pre-clerkship course called Doctoring.¹ The didactic sessions and community mentoring components of this course were specifically designed to further encourage students to make meaningful connections between the basic sciences and clinical medicine. Finally, in addition to content integration, the planned design aimed to incorporate flexibility that would foster individualism. Students have the opportunity to delve deeply into a cross-disciplinary Scholarly Concentration² of their choice during their four years of medical school. A conceptual schematic of the intended 4-year continuum is shown in Figure 1.

THE CURRICULUM

Prior to the 2006-2007 academic year, the two-year preclinical curriculum consisted of a traditional model of “normal,” taught in Year I, and “abnormal” (pathophysiology, pathology, and pharmacology) taught in a systems-based manner in Year II. Year I was organized on a discipline-based, department-based model (separate courses in biochemistry, anatomy, pathology, etc., with minimal integration). In the new curriculum, we sought to introduce fundamental concepts that underlie mechanisms of disease in an integrated fashion during Semester I, followed by systems-based study starting in Semester II of Year I. This not only creates focused modules of study, but also allows students to finish their pre-clerkship coursework earlier. As a result, students will begin their clerkships six weeks earlier and will be better positioned to complete their core clerkships prior to applying to and interviewing with residency programs.

YEAR I REDESIGN Semester I

Recognizing that students enter medical school with varying levels of expertise and knowledge of different fields, the first semester is largely comprised of a course focused on providing a foundation in the basic science building blocks. The course, Integrated Medical Sciences I (IMS-I), includes 4 sections:

Section 1. Scientific Foundations of Medicine (an amalgam of Cell Physiology, Nutritional Science, Biochemistry, Introductory Immunology and Genetics)

Section 2. Histology

Section 3. Human Anatomy

Section 4. General Pathology

Throughout the semester, lectures from each of the different sections are coordinated by topic area. For example, the anatomy of the GI tract is taught in conjunction with GI histology and nutrition science. Moreover, integrated examinations are scheduled for 2-3 week intervals on the topics covered during this time period. This approach, as opposed to having separate exams for each subject (biochemistry, pathology, etc.) scheduled as a block of midterms or finals, further helps students consolidate what they are learning and draw parallels across subject areas. The effort towards integration is ongoing and has required the cooperative input of course leaders, faculty, and students. Because this model was well-received in Fall '06, we will maintain this general schematic with further integration in Fall '07.

Semester II

Starting in the second semester, Integrated Medical Sciences II (IMS-II) includes separate blocks organized by

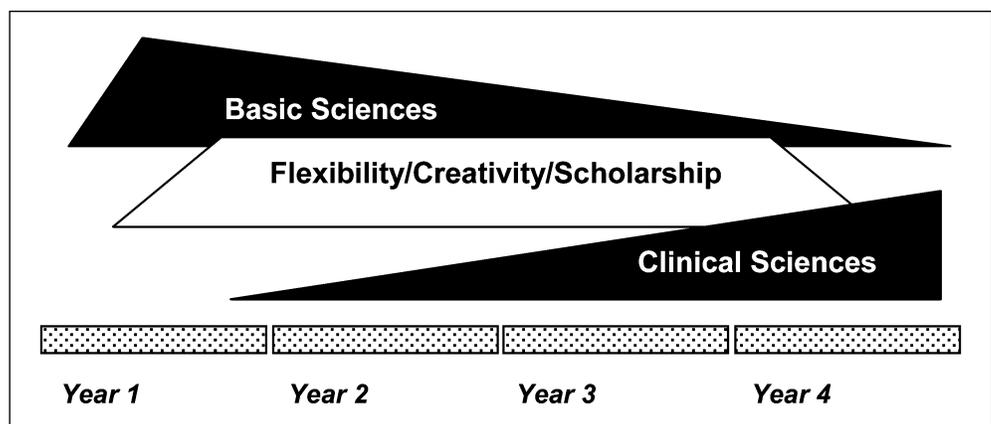
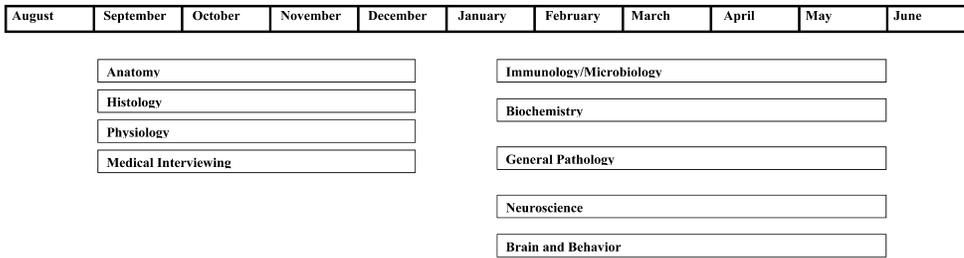
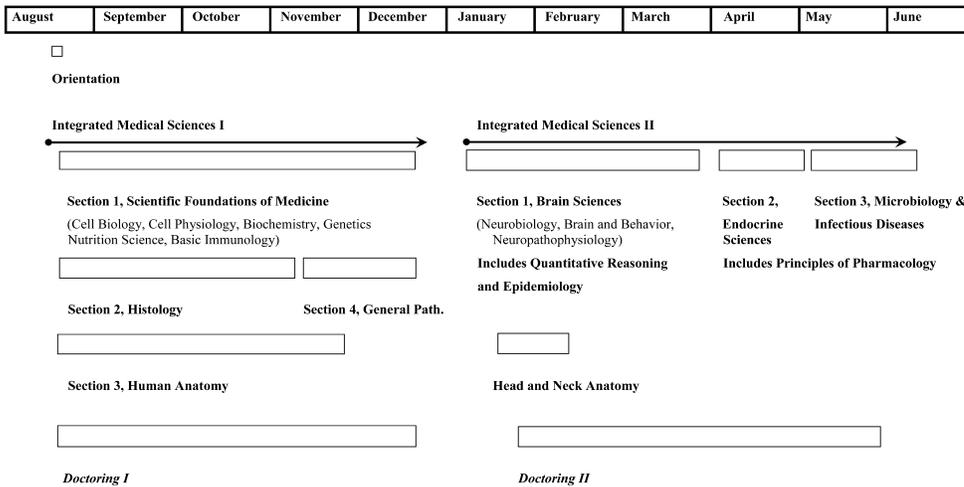


Figure 1. A schematic representation of the goal of achieving curriculum redesign in which basic medical science content, clinical training and scholarship are integrated across a 4-year medical curriculum.

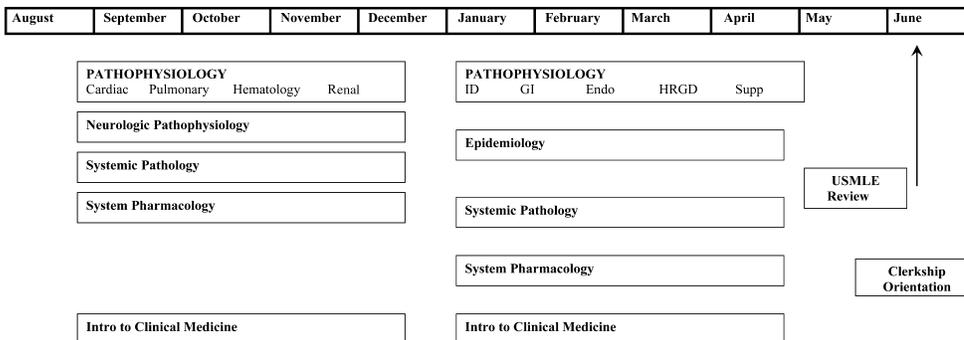
Year I: Brown Medical School First-Year Curriculum, 2004-2005



Year I: Brown Medical School First-Year Curriculum, 2006-2007



Year II: Brown Medical School Second-Year Curriculum, 2004-2005



Year II: Brown Medical School Second-Year Curriculum, 2007-2008

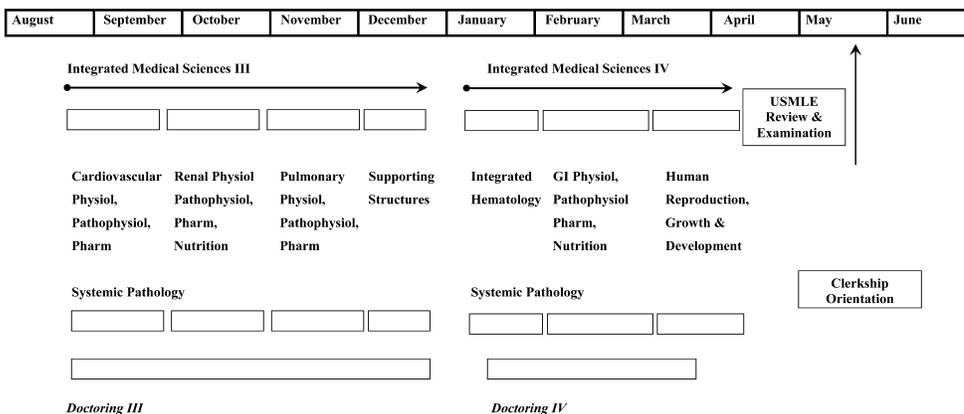


Figure 2. Organization of the previous and redesigned medical curricula.

“system.” In the redesigned curriculum, each block incorporates teaching of normal physiology with the pathophysiology, pharmacology and systemic pathology for each system. Between January and March, students engage in the study of Brain Sciences – a combination of neurobiology, behavioral science (our former “Brain and Behavior” course), neuropathology and neuropathophysiology. After a one-week Spring break, students return to study a 4 week block of Endocrine Sciences consisting of Endocrine physiology, pathophysiology, pathology, and pharmacology. Year I ends with a 6-week block in which microbiology and infectious diseases are covered. During this Micro/ID block, students also study epidemiology and quantitative reasoning.

By dedicating segments of time during the year to specific systemic topics, students are able to better focus their study efforts on mastering the topics presented in class. For example, during the Brain Sciences block, the anatomy team teaches head and neck anatomy alongside neurobiology. Students are introduced to pathways and structures in classroom sessions which are revisited in a different format in the anatomy lab. This configuration encourages reinforcement of material learned in different disciplines, but with less unintentional and ineffective redundancy.

Students from the Class of 2010 completed Year I of this new curriculum on June 8, 2007. All measures indicate that students are overall satisfied with the

integration and changes in the new curriculum. Examination scores were not significantly different than in past years. Given that the content had been significantly condensed and thoroughly reorganized, this was seen in a positive light. Planning for further development of the first semester curriculum was taken under consideration during two well-attended retreats with first semester course leaders.

YEAR II REDESIGN

There are several changes envisioned for the new Year II curriculum, to begin in August 2007. They can be briefly outlined:

1. Year II will be shorter than in the traditional curriculum, since three systems were shifted to Year I – neuropathophysiology, endocrine (pathophysiology, pathology and pharmacology), and infectious diseases. Classes will end earlier (March 17, 2008, as opposed to May 3 this year). The completion of classes will be followed by 6-weeks of USMLE Step 1 preparation. Clerkship orientation will begin on May 5, and Core clerkships will begin on May 12, 2008.
2. Each system block will incorporate normal physiology, pathophysiology, pharmacology and pathology. The information is presented in class lectures and then reinforced with cases in multiple small group sessions during each week. Figure 2 shows an overview of the Year II curriculum design.
3. Students will have time devoted specifically to their Scholarly Concentration, if they have chosen to pursue one. There will be minimal scheduling of classes on Wednesdays, which will be reserved for self-directed learning and work on Scholarly Concentrations.



CONCLUSION

With the redesign of the Warren Alpert Medical School pre-clerkship curriculum still underway, and in anticipation of students entering Year II of the new curriculum, enthusiasm from both faculty and students continues to grow. Many of the original design goals have been implemented and student and faculty feedback have been positive. The curriculum is integrated across content areas, and the succession of content areas is rationally designed rather than being dependent on a traditional course-based and discipline-based approach. The faculty from diverse disciplines have come together to create new educational structures, such as the Integrated Brain Sciences section and the Micro/ID section. In addition, dedicated time in the schedule in Year II has been allotted for Scholarly Concentration and independent study work. While the process to date is by no means complete, the implementation of the redesigned first-year curriculum marks a significant step forward for the medical education program.

REFERENCES

1. Monroe AD. Doctoring. *Medicine & Health RI* 2006;89: 304-6.
2. Rickards E, Borkan J, Gruppuso PA. Educating the next generation of leaders in medicine. *Medicine & Health RI* [CURRENT ISSUE], 2007.

Sonia Garg is a member of the Class of 2009.

Philip A. Gruppuso, MD, is the Associate Dean for Medical Education and Professor of Pediatrics.

Luba Dumenco is the Director for Pre-Clinical Curriculum.

All are with the Warren Alpert Medical School of Brown University.

Financial Disclosure

Sonia Garg, Philip A. Gruppuso, MD, and Luba Dumenco, MD, have no financial interests to disclose.

CORRESPONDENCE

Luba Dumenco, MD
The Warren Alpert Medical School of Brown University
Box G-B2
Providence, RI 02912
phone: (401) 863-2913
e-mail: Luba_Dumenco@Brown.edu

Educating the Next Generation of Leaders In Medicine: The Scholarly Concentrations Program at the Warren Alpert Medical School of Brown University

Emily Rickards, MA, Jeffrey Borkan, MD, PhD, Philip A. Gruppuso, MD

Generations of physicians have been trained in the traditional medical school model. This model, while comprehensive, takes a one-size-fits-all approach to medical education. Current medical students are at the forefront of Generation Y (also known as *Generation Why* and the *Millennium Generation*),¹ a generation that is technologically savvy, socially conscious and interconnected to an unprecedented degree. A contemporary model of medical education must harness the passions of today's medical students, and through its programs and initiatives help students translate their interests into scholarship. Such programs would bring a new level of excellence to medical education. The **Scholarly Concentrations (SC) Program** at the Warren Alpert Medical School of Brown University does just that.

The SC Program is an elective initiative through which students may pursue cross-disciplinary academic interests that extend beyond the conventional curriculum. Scholarly Concentrations are designed to create opportunities for professional growth, depth of knowledge and academic excellence. Students who participate in a Scholarly Concentration undertake rigorous independent scholarship in a field related to medicine, public health, engineering, or a bio-medically relevant topic in the sciences, arts, or humanities. In collaboration with their concentration area mentors, students will produce an academic product, such as a manuscript of publication quality, a curriculum project, or an equivalent product. Additionally, the array of concentration areas lets students increase their skills in the medical school's defined competency areas, the "Nine Abilities."

The SC Program at the Alpert Medical School aligns with Brown University's core institutional values of curricular flexibility and self-directed learning. The program takes a broad view of "scholarship" that includes, but is not limited to, traditional basic science or clinical re-

search. The program's emphasis on self-directed learning and scholarly rigor has the potential to contribute greatly to the education of modern medical students and to the creation of the next generation of leaders in medicine. This article provides an overview of the SC Program and compares it to similar programs across the country.

PROGRAM OVERVIEW

Setting the Stage

The curriculum reform efforts at the Alpert Medical School have provided fertile ground for development of the new SC Program. Conversations about students' professional development and the need for a cross-disciplinary approach to biomedical content were already well underway in academic year 2007 when the SC Program was launched. More broadly, the curricular reform and other institutional changes occurring at the Alpert Medical School represent an effort to build a distinct medical school

identity while at the same time retaining the institutional values of Brown University. The decision to make the SC Program elective rather than required was based on institutional values of student choice and self-directed learning, and on the desire that students not perceive the program as an additional "hoop" to jump through. The SC Program is ideal for students who have, or wish to develop, an involvement in a subject, activity or cause related to their future as physicians. Academic rigor is a central tenet of the new program, and only students in good standing at the time of application will be permitted to participate.

Goals

The goals of the Scholarly Concentration Program are:

- To promote scholarly excellence
- To produce scholarly leaders in medicine, research, education, and advocacy

Table 1. Program Timeline

	Process
Year I	<ul style="list-style-type: none"> • Students identify an area of interest and a faculty mentor. • Together, students and faculty mentors develop a summer experience, investigate summer funding opportunities, and outline a four-year plan to complete the concentration requirements. • Concentration Directors review applications for project merit and determine program acceptance.
Summer	<ul style="list-style-type: none"> • Students engage in in-depth summer experiences (8-10 weeks). • This summer work provides the scaffolding upon which the four-year concentration, and the final scholarly product, will be built.
Year II	<ul style="list-style-type: none"> • Students continue their participation in the concentration through the utilization of self-directed learning time (half-day of self-directed learning time on Wednesdays). • Students attend courses/seminars as required by the particular concentration area.
Year III	<ul style="list-style-type: none"> • Students continue their participation in the concentration through the choice of electives related to their chosen concentration area. • Students continue independent project work.
Year IV	<ul style="list-style-type: none"> • Students continue their participation in the concentration through the choice of electives related to the concentration area. • Students complete independent project work. • Students present their scholarly product for evaluation in February/March of Year IV as required by the concentration area.

Table 2. Comparable Programs

School	Program	Required vs. Elective	Program Requirements
Alpert Medical School of Brown University	Scholarly Concentrations	Elective	<ul style="list-style-type: none"> • Cross-disciplinary exploration • In-depth summer experience • Longitudinal faculty-student mentorship • Presentation of scholarly product in Year IV
Baylor College of Medicine	Elective Tracks	Elective	<ul style="list-style-type: none"> • Presentation of scholarly product in Year IV
Case Western Reserve University School of Medicine	Research Block	Required	<ul style="list-style-type: none"> • 4 month research block • Research focus • Thesis
Duke University School of Medicine	Scholarly Experience	Required	<ul style="list-style-type: none"> • 10-12 months in duration • Research focus • Thesis
Harvard Medical School	Areas of Concentration	N/A	<ul style="list-style-type: none"> • Program has been proposed and is in development as part of curriculum reform
Stanford University School of Medicine	Scholarly Concentrations	Required	<ul style="list-style-type: none"> • Cross-disciplinary exploration • Annual Progress Report final Scholars Paper • Presentation of on-line learning portfolio
UCSF School of Medicine	Areas of Concentration	Elective	<ul style="list-style-type: none"> • Cross-disciplinary exploration • Required courses within each area of concentration • Presentation of scholarly product in Year IV
University of Pennsylvania School of Medicine	Scholarly Study	Elective	<ul style="list-style-type: none"> • 3 months to 1 year duration • Research focus • Final written report or publication • Poster presentation at Research Day
University of Pittsburgh School of Medicine	Areas of Concentration	Elective	<ul style="list-style-type: none"> • Presentation of scholarly product in Year IV required for all students (regardless of participation in an area of concentration)
Yale University School of Medicine	Thesis requirement	Required	<ul style="list-style-type: none"> • Focus on original basic science or clinical of research • Thesis

- To enrich the student experience, the Alpert Medical School community, and the greater society.

Essential elements of the Scholarly Concentrations experience include:

- Rigorous independent scholarship
- Cross-disciplinary study
- Mentored relationships
- Group seminars/courses
- Scholarly work across Years I-IV of medical school
- Completion of an academic product

The Scholarly Concentrations offer students “real world” educational experiences and the opportunity to apply their biomedical knowledge in new and exciting ways. Additionally, students benefit from the longitudinal faculty mentor relationship that is

central to the Concentrations Program. As a result, the program necessarily involves a high level of faculty participation. Faculty are involved as concentration area Directors and as mentors. In the Director role, faculty design and deliver curricula for individual concentration areas, and facilitate the evaluation of student projects. In the role of medical student mentor, faculty provide students with guidance and support throughout their four years of medical school. The willingness of faculty to participate in this new program has been gratifying and reflects their dedication to medical student education.

SCHOLARSHIP
Defining Scholarship

The promotion of “scholarship” requires a shared understanding of the term. In 1990, Ernest Boyer² expanded the definition to include the full scope of academic work. He proposed three additional areas of scholarship beyond the tra-

ditional “scholarship of discovery” that encompasses original research. “Scholarship of integration” refers to interdisciplinary work in which connections are made across research fields, and to the grounding of discovery in wider contexts. “Scholarship of application” refers to the bidirectional feedback loop between theory and practice, and is particularly relevant to service aspects of academic life. Finally, “scholarship of teaching” refers to effective communication of knowledge to learners, and to the creation and sharing of knowledge about the practice of teaching.

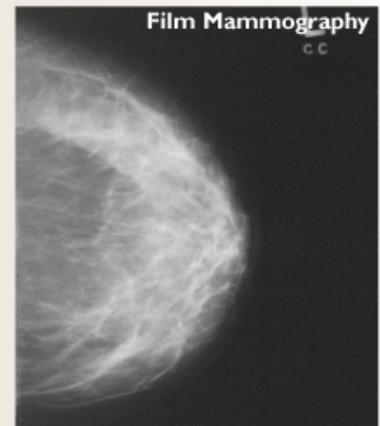
The SC Program incorporates elements from each of these domains. First and foremost, each concentration area is explicitly designed to cross traditional biomedical disciplines (scholarship of integration). Additionally, a student’s experience within a concentration area might include work that falls within other scholarship domains.



Introducing Digital Mammography

Pleased to be the first in RI to offer your patients Digital Mammography in private, convenient office settings.

- Digital Mammography is 27% more sensitive for cancer in women under 50, any woman with dense breast tissue and also pre and perimenopausal women, accounting for 65% of screening mammography (NEJM and NCI data).
- Digital Mammography with our latest generation CAD system detects 34% more DCIS.
- Dramatically shorter exam times and 50% less radiation than systems which use cassettes (traditional film mammography & CR mammography-hybrid digital).
- Available at each of our mammography sites; Warwick, Cranston and North Providence, assuring that your patients always benefit from the latest in technology. Same insurance coverage as traditional mammography and appointments are readily available.



OPEN & High Field MRI & MRA



CT and 3D CT



CTA



3D Ultrasound



WARWICK
250 Toll Gate Rd.
401.921.2900

CRANSTON
1301 Reservoir Ave.
401.490.0040

CRANSTON (annex)
1500 Pontiac Ave.
401.228.7901

N. PROVIDENCE
1500 Mineral Spring
401.533.9300

E. PROVIDENCE
450 Vets. Mem. Pkwy. #8
401.431.0080

A Clearer Vision of Health™

PATRICK M.
CROWLEY INC.
MEDICAL OFFICE INTERIORS

16 Years of Building Beautiful Interiors



Our unique services include:

Space planning and design that balances the practical limitations of existing infrastructure with creative and beautiful design solutions.

Modular cabinetry designed and fabricated in our own cabinet shop, designed for high utilization needs of doctors and dentists in every specialty.

Standard remodeling and "off hours" remodeling services that maintain the standards of working in a professional, clinical environment.

If you are looking to remodel, improve the look of your office, maximize space and efficiency or all of the above contact us. We will set up a free consultation meeting to explore possibilities.

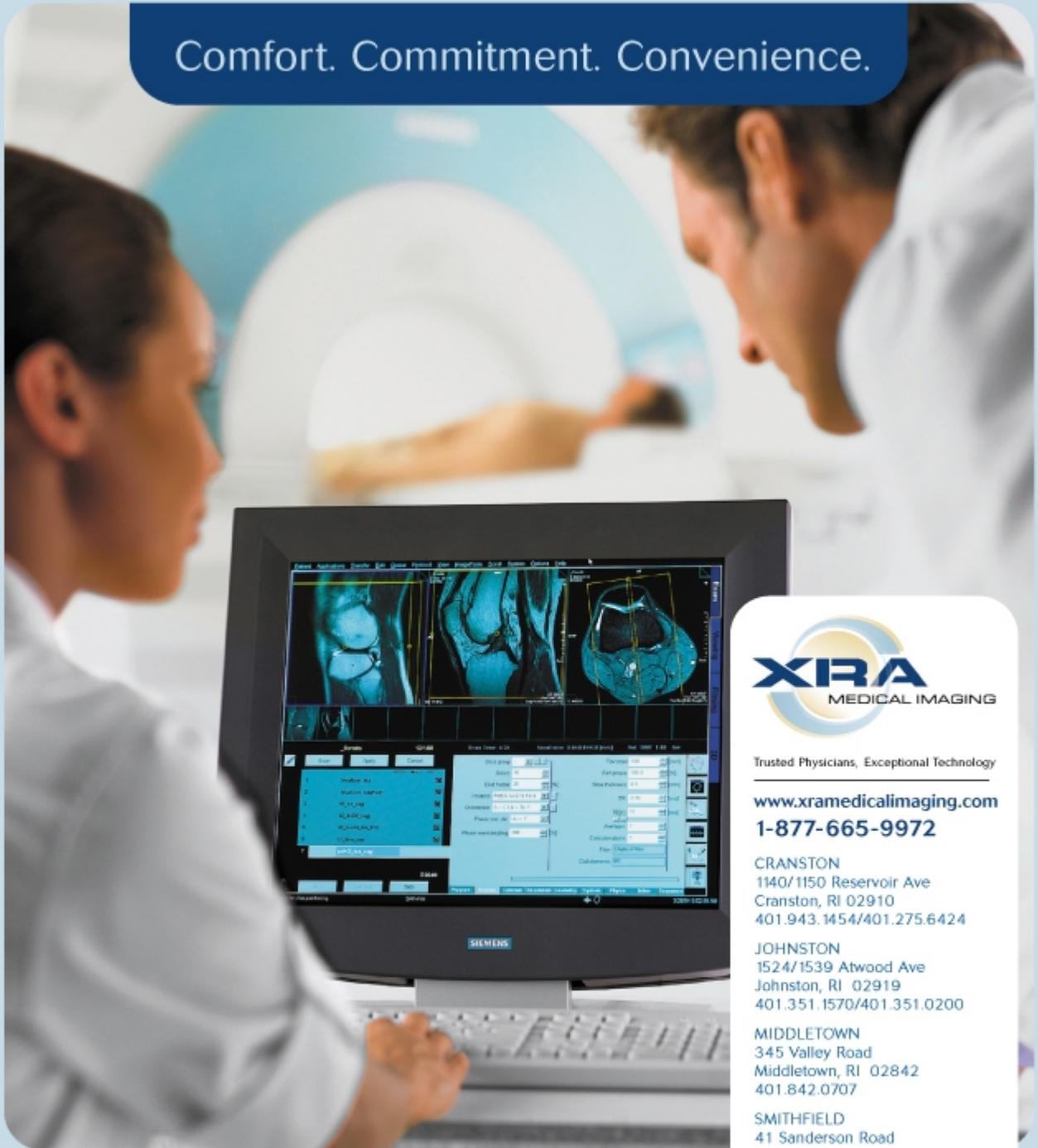
800-791-0097



We'll Design & BuildYou Can Relax

PATRICK M. CROWLEY, INC.
20 STARR STREET
JOHNSTON RI 02919
OFFICE: 401-464-9600
FAX: 401-464-9640
TOLL FREE: 800-791-0097
WEBSITE:
MEDICALOFFICEINTERIORS.COM

Comfort. Commitment. Convenience.



When you want the finest, most comfortable and most convenient medical imaging, come to XRA.

- Comfortable open medical imaging in a soothing setting ensuring a calming experience preferred by patients.
- A commitment to quality care, cutting edge technologies and the finest, fellowship trained physicians & technicians.
- Six convenient locations throughout Rhode Island.



Trusted Physicians, Exceptional Technology

www.xramedicalimaging.com

1-877-665-9972

CRANSTON
1140/1150 Reservoir Ave
Cranston, RI 02910
401.943.1454/401.275.6424

JOHNSTON
1524/1539 Atwood Ave
Johnston, RI 02919
401.351.1570/401.351.0200

MIDDLETOWN
345 Valley Road
Middletown, RI 02842
401.842.0707

SMITHFIELD
41 Sanderson Road
Smithfield, RI 02917

WAKEFIELD
481 Kingstown Road
Wakefield, RI 02879
401.792.9840

WARWICK (MRI Only)
227 Centerville Road
Warwick, RI
401.737.0884

MRI Open MRI CT Ultrasound Bone Density
Fluoroscopy Mammography X-Ray

For example, a student concentrating in Medical Technology and Innovation might develop a biotechnology tool that spans the disciplines of engineering and medicine (scholarship of integration). The student then focuses her efforts on documenting the uses of that tool and its effect on patient outcomes (scholarship of application). Another student might choose a concentration in Medical Education, allowing him to extend his bench research by writing a curriculum for a preclinical course that incorporates his research findings (scholarship of integration). During his concentration he might solicit peer review of his lecturing and presentation skills (scholarship of teaching).

Scholarly Products

In addition to meeting general concentration requirements such as attending didactic sessions and discussion groups, students must produce a final “scholarly product.”

Although not all will be based on traditional basic science or clinical research, these products must be characterized by clear goals, adequate preparation, appropriate methodology, significant results, effective presentation and reflective critique. Scholarly projects may include the following but are not limited to:

- Development of a new curriculum component or module;
- Evaluation of an outreach program;
- Publication in a peer-reviewed journal;
- Medical creative writing;

- Creation of a bioengineering tool or biomedical software product;
- Development of new clinical protocols.

PROCESS AND TIMELINE

Information about the program has been made available for potential medical school applicants on the BMS website (<http://bms.brown.edu/students/curriculum/concentrations>). Alpert Medical School applicants will also be informed about the program during admission interviews. Once students have matriculated, they will be exposed to the program and to all of the concentration areas during Orientation and a fall information session.

Formal application to the SC program is completed in the spring of Year I (*Table 1*). Participants will develop a summer project to be completed between Years I and II. In Year II they will attend didactic sessions and continue their project work. (One aspect of curriculum reform included a rearrangement of Year II courses. As a result, one day per week was freed up to be dedicated to self-directed learning. Second year students participating in the SC Program will be able to dedicate approximately half of this time to their concentration area projects.) In Years III and IV students will complete clinical electives related to their concentration. Additionally, each student must produce a “Scholarly Product” in Year IV.

Fulfillment of the requirements of a concentration area is feasible within four years, although students may choose to extend their studies for an additional year of research or project development. Through this process of mentoring, submission and review, students ultimately achieve recognition for scholarly excellence, and the University contributes to the development of leaders in the bio-medical sciences.

NATIONAL TRENDS AND COMPARABLE PROGRAMS AT OTHER MEDICAL SCHOOL

The development of programmatic tracks providing students with additional academic opportunities represents a national trend in medical education. A number of medical schools across the country have established similar concentrations or “Areas of Excellence” programs (*Table 2*). Some programs focus exclusively on traditional research and provide students with dedicated time to pursue research projects.³ Perhaps the oldest such program is that of Yale, which has required students to complete a basic science or clinical research thesis since 1839. Other programs more loosely define “scholarship” and emphasize cross-disciplinary inquiry. The establishment of both required and elective programs reflects an understanding of the importance of providing students with self-directed learning time to explore biomedical content beyond the traditional medical school curriculum.

Though not the first of its kind, the Alpert Medical School’s SC Program is unique in its level of student and faculty involvement. A comparable elective program at the University of Pittsburgh School of Medicine reported an enrollment of 5 students in its initial year, and an average of 22 students (approximately 15% of the class) participating in seven Areas of Concentration in subsequent years.⁴ In the initial year of the SC Program, 41 students of the Alpert Medical School class of 2010 (45% of the class) are participating in 10 concentration areas (*Tables 3 & 4*).



YOUR OWN PERSONAL OASIS



THE 903 RESIDENCES IN DOWNTOWN PROVIDENCE ALLOW YOU TO ENJOY THE BEST OF EVERYTHING:

- Stylish Interiors
- Resort Style Swimming Pool
- Full-Service Concierge
- State-of-the-art Gym
- Gated Parking
- Media Room
- Close to Dining & Entertainment
- Convenient to all Major Hospitals



Studios: \$187,900-\$224,900

One Bedroom: \$262,900-\$305,900

Two Bedroom: \$344,900-\$462,900

SEPTEMBER INCENTIVE
Ask about our:
Special Financing
for Licensed
Medical
Professionals
Call for details.

Sales office open daily 11-6
Sales By: BFC





401-831-0903 • 903 Providence Place • Providence RI • the903.com

Table 3. Student Participation, Class of 2010

Concentration Area	Total # Students	
	Enrolled	Examples of Student Projects
Advocacy and Activism	4	<i>Breaking the Silence- Cambodian Refugees and the Role of Health Advocacy as a Voice for Displaced Populations</i> <i>Nutrition Indicators in the Homeless Population of Providence, RI</i>
Aging	6	<i>Integration of End-of-Life Care into the Medical School Curriculum</i> <i>Current Research in Cellular Senescence: The Biology of Aging</i>
Contemplative Studies	2	<i>A Study of Consciousness: A First and Third-Person Approach</i>
Global Health	10	<i>Women's Health Initiatives in Rural Honduras: Analyzing Barriers to Care Utilization and Improving Interventions</i> <i>Highly Active Anti-Retroviral Therapy in Pregnant and Breast Feeding</i> <i>Risk Factors for Mortality in Hospitalized Adults with Tuberculosis at Komfo Anokye</i>
Informatics	1	<i>The FreeCRF Project</i>
Medical Education <i>lab curriculum redesign)</i>	3	<i>Curriculum Development in the Doctoring and Anatomy Courses (Anatomy</i>
Medical Ethics	2	<i>Comparative Medical Ethics</i>
Medical Humanities <i>among Psychiatric Inpatients</i>	5	<i>Art Therapy: A Study of its Effects on Anxiety and Depression Levels</i> <i>Exploring Music, Communication and Pain in Medicine</i>
Medical Technology and Innovation	4	<i>Breast Cancer Screening & Diagnosis with Optical Spectroscopy</i>
Women's Reproductive Health, Freedom and Rights	4	<i>A survey-based multi-faceted study of risky behaviors of female sex workers in China (Role of Migration, mental health and knowledge)</i> <i>Creating Prenatal Care Provider Prompts for an Electronic Medical Record</i>
TOTAL	41*	

*Scholarly Concentration participation = 45% of the Class of 2010 (92 students)

The elective nature of the program ensures that students are motivated by the internal factors of intellectual curiosity, dedication to social issues, and a desire to take an active role in their own education. Broad faculty and student interest in the program indicate that the SC Program fulfills a curricular need.

- Medical Education
- Medical Ethics
- Medical Humanities
- Medical Technology and Innovation
- Women's Reproductive Health, Freedom and Rights

communicate biomedical information to patients or through scientific writing (Concentration in Medical Humanities). Students interested in mainstream biomedical research are encouraged to think creatively about how to apply the timeline and requirements of the Concentrations Program to their experience.

SCHOLARLY CONCENTRATION AREAS

Concentration areas have been developed through the dedication of interested faculty from across the University and affiliated hospitals. The following ten concentration areas are offered in Academic Year 2007 (*Table 4*):

- Advocacy and Activism
- Aging
- Contemplative Studies
- Global Health
- Informatics

The identification of these areas is not meant to detract from the more traditional basic or clinical research experience that some students will undoubtedly continue to choose. While no concentration area specifically focuses on traditional research, the cross-disciplinary nature of the concentrations lends itself to the incorporation of traditional research. A student pursuing traditional research might extend his or her investigation to the application of findings to a geriatric population (Concentration in Aging). Another student might become interested in how physician-researchers com-

FUNDING AND RESOURCES

The Scholarly Concentrations Program was undertaken with considerable resources already in place, and more are being sought. The Hind Endowment supports between twenty and twenty-five summer assistantships each year. Tuition derived from the Visiting International Medical Student program contributes to support for international travel for our students. Gifts and restricted funds are available to support programs in Women's Reproductive Health, Freedom and Rights and Humanism in Medicine. A grant from the Donald W. Reynolds Foundation to the Alpert Medi-

cal School supports multiple geriatrics-related curriculum innovations and summer stipends for students. Going forward, it is thought that the SC Program will be ideal for future development efforts.

SUMMARY

The establishment of the Scholarly Concentrations Program represents an important aspect of overall curriculum reform, and of the institution's commitment

to the education of medical students. This initiative has great potential to create knowledge and develop future leaders, and we look forward to its growth and evolution. We anticipate that the SC Program will raise the profile of the Alpert Medical School of Brown University nationally, and ultimately carve a distinctive place for the school among the top medical education programs in the country.

Table 4. Concentration Areas and Directors

Concentration Area	Director(s)
Advocacy and Activism	Patricia Flanagan, MD Associate Professor of Pediatrics
Aging	Lynn McNicoll, MD Assistant Professor of Medicine Renée Shield, PhD Director, Resource Center for Geriatrics Education
Contemplative Studies	Harold D. Roth Professor of Religious Studies and East Asian Studies Gary Epstein-Lubow, MD Instructor, Department of Psychiatry and Human Behavior
Global Health	Stephen T. McGarvey, PhD, MPH Professor of Community Health and Anthropology, Director, International Health Institute Timothy P. Flanigan, MD Professor of Medicine Timothy Empkie, MD, MPH Assistant Dean of Medicine (Advising)
Informatics	Cedric J. Priebe III, MD Chief Medical Information Officer, Care New England Reid Coleman, MD Medical Informatics Officer, Lifespan
Medical Education	Richard Dollase, EdD Director, Office of Curriculum Affairs
Medical Ethics	Jay Baruch, MD Assistant Professor of Emergency Medicine Tom Bledsoe, MD Director, Center for Biomedical Ethics
Medical Humanities	Michael Steinberg, PhD Professor of History
Medical Technology and Innovation	Gregory Crawford, PhD Dean and Professor of Engineering Eric Suuberg, PhD Professor of Engineering
Women's Reproductive Health, Freedom and Rights	Lori A. Boardman, MD, ScM, Associate Professor Obstetrics and Gynecology Melissa Nothnagle, MD Assistant Professor of Family Medicine

REFERENCES

1. http://en.wikipedia.org/wiki/Generation_Y
2. Boyer EL. Scholarship Reconsidered: Priorities of the Professoriate. Princeton, MJ: The Carnegie Foundation for the Advancement of Teaching, 1990.
3. Schor NF, Troen P, et al. The Scholarly Project Initiative. *Acad Med* 2005;80: 824-31.
4. Kanter SL, Wimmers PF, Levine AS. In-depth learning. *Acad Med* 2007;82: 405-9.

Emily Rickards, MA, is the Manager of the Scholarly Concentrations Program.

Jeffrey Borkan, MD, PhD, is Professor and Chair, Department of Family Medicine.

Philip A. Gruppuso, MD, is the Associate Dean for Medical Education and Professor of Pediatrics.

All are with the Warren Alpert Medical School of Brown University.

Disclosure of Financial Interests

Emily Rickards, MA, Jeffrey Borkan, MD, PhD, and Philip Gruppuso, MD, have no financial interests to disclose.

CORRESPONDENCE

Emily Rickards, MA
The Warren Alpert Medical School of Brown University
Box G-B203
Providence, RI 02912
phone: (401) 863-9139
e-mail: Emily_Rickards@Brown.edu



Reducing the Public Health Burden of Low Vision in the Rhode Island Elderly

Christina S. Moon, Angela Turalba, MD, Kent L. Anderson, MD, PhD, Edward Feller, MD

In the US, low vision is defined as having less than 20/40 best-corrected acuity (not correctable with glasses, contact lenses, or surgical intervention); blindness is defined as having a best-corrected acuity less than 20/200 as measured using a standard Snellen eye chart.¹ A 2002 National Eye Institute study estimates that there are 3.4 million individuals with low vision and blindness in the US.² The definition of visual impairment, which determines who can receive provided services and tax-benefits, varies from state to state. In **Rhode Island (RI)**, visual impairment is defined as an acuity better than 20/200, but not better than 20/60. More than 16,000 Rhode Islanders are estimated to be visually impaired or blind.² Health professionals must be aware that visual acuity as determined by the Snellen chart does not encompass the range of visual limitations that affect daily living.

Age-related ocular diseases such as macular degeneration, diabetic retinopathy, cataract, and glaucoma cause the majority of severe visual impairment. Therapeutic options exist, although some forms and stages are less amenable to treatment. Aging itself is also associated with ocular changes that result in reduced visual function. Many older individuals have reduced acuity, loss of central or peripheral visual fields, loss of color or contrast sensitivity, light scatter, image distortion, and sensitivity to glare.

Much of the irreversible damage associated with ocular disease can be prevented or slowed with appropriate eye care. Data indicate that elderly persons who have regular eye examinations experience less decline in vision and functional status.³ However, regular eye examinations are not common practice. As few as 11% of nursing home residents have received an eye exam in the last two years.⁴ Blindness and visual impairment are common among nursing home residents. In a Johns Hopkins study of nursing home residents, 17% of the residents were blind and 18.8% were found to be visually impaired.⁵ In US adults over 40,

0.78% are estimated to be blind and 1.98% are estimated to have low vision.¹

This data on visual acuity impairment, although based on a criteria commonly applied in the USA, underestimates the spectrum, prevalence, and impact of low vision under diverse viewing conditions. In older individuals, visual acuity measured as 20/30 under standard conditions can deteriorate to as low as 20/120 in conditions of low contrast, glare, and low luminance. (Figure 1) Under the same conditions, a young person with an acuity of 20/20 would only be expected to drop to an acuity 20/30 or 20/40.⁶

Standard visual acuity testing is an incomplete measure of low vision in older adults.

THE AGING EYE

The dramatic deterioration of sight in the elderly is thought to be a result of the aging of the eye. A decline in stereopsis, the ability to see objects in depth based on the disparity of the images in the two eyes, also occurs. Decreased pupil diameter and yellowing of the lens reduce and tint the amount of light reaching the retina of the older patient, creating a retinal image that is dimmer and yellowed. In addition, increased scatter of light occurs in the cornea, lens, and vitreous.⁶ Consequently, glare reduces and exacerbates the intensity of light and effective contrast of visual targets. As a result of miosis and decreased ocular transmittance, the effective intensity of white light in the 80 year-old eye is reduced to only 10% of that appreciated by the 25-year old eye.⁷ Loss of color discrimination results from the smaller pupil diameter and reduced light transmittance through the lens.⁶ Glare recovery, the ability to recover vision in moderate

light following exposure to much brighter light, is also markedly decreased in the aged eye. In one study, after measuring visual acuity in ambient light, participants exposed to a bright light source for one minute were timed to determine how much time subjects required to recover pretest visual acuity; 25% of those 75-79 years old required 1 minute, and 25% of those 85 and older required more than 2.5 minutes.⁷ Under the same conditions, a young adult would be predicted to recover in less than 10 seconds. Impaired glare recovery has practical implications, potentially rendering an older person functionally blind while adjusting to indoor lighting after being outdoors on a bright day or entering a dim tunnel while driving in the daylight. Older individuals who have good acuity by standard measures may experience low vision in common, every-day situations.

CONSEQUENCES OF VISUAL IMPAIRMENT

Data suggest that visual impairment is an independent predictor of mortality,^{8,9} a risk factor for falls in the elderly,¹⁰ and a factor in as many as 40% of hip fractures.¹¹ Impaired vision is thought to contribute to depression¹² and cognitive decline.¹³ Vision loss is the third most common chronic condition, after arthritis and heart disease, that causes individuals over 70 to require assistance in activities of daily living.¹⁴ Vision loss is also associated with emotional distress,¹⁵ diminished quality of life, and an increased reliance upon community services¹⁶

SOCIALIZATION-BEHAVIORAL ASPECTS

Vision loss significantly increases the risk that a person will have difficulty with daily tasks such as reading a telephone book or newspaper, watching television, and recognizing faces.¹⁷ The ability to recognize faces and emotional expressions is key to successful social interactions; even in elders without severe eye disease, face recognition is reduced with age⁷

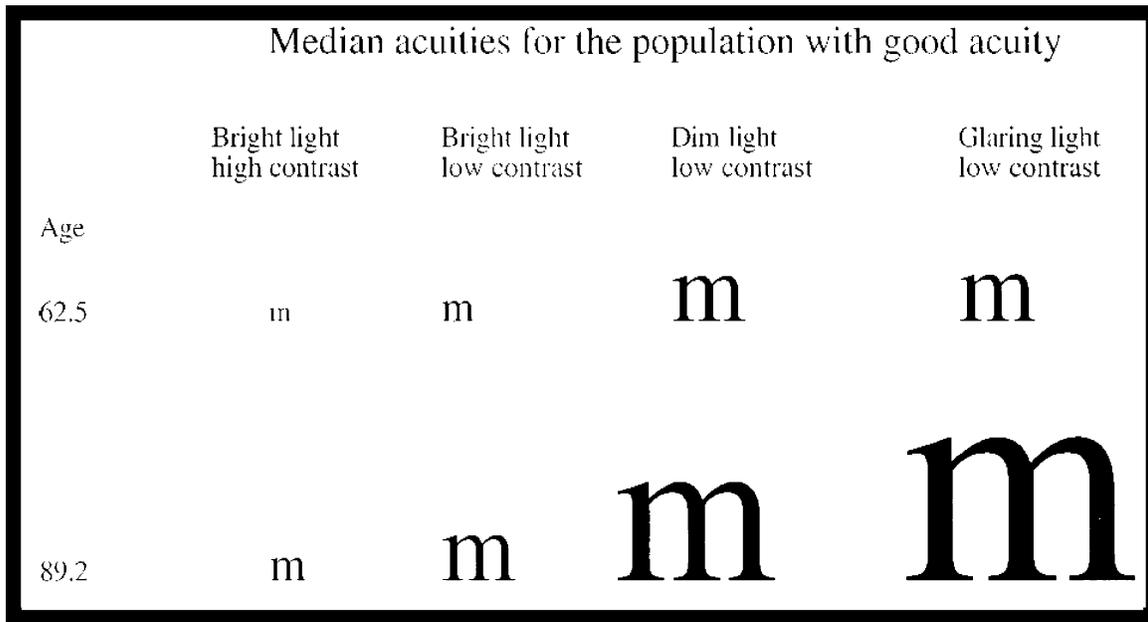


Figure 1. Low Vision Under Everyday Conditions. Deterioration in reading under conditions of glare, dim light, and reduced contrast is more dramatic in the older group.⁷ Reprinted from *Ophthalmology Clinics of North America*, Vol 16 (2), Schneck ME, Haegerstrom-Portnoy G, Practical assessment of vision in the elderly, Page 279, Copyright (2003), with permission from Elsevier.

Table 1. Strategies to Offer Low Vision Patients.^{6,22}

Change real or perceived size of objects	<ul style="list-style-type: none"> • Move closer (TV) • Enlarge (large print books, checks) • Magnifying devices
Improve lighting	<ul style="list-style-type: none"> • Lamps and motion lights; carry a penlight
Increase contrast between objects and background	<ul style="list-style-type: none"> • Dark switches on light-colored walls • Coffee in white cup, soap in dark soapdish • Felt tip pen, not ballpoint on labels • Plain tablecloths, not patterned
Use bright colors	<ul style="list-style-type: none"> • Avoid harder-to-distinguish colors: brown, navy, black, and pastels • Brightly colored tape on stairways, dials
Reduce glare	<ul style="list-style-type: none"> • Cover polished tables and shiny counters • OUTDOORS: wear tinted glasses, visor
Consider alternative strategies that do not use vision	<ul style="list-style-type: none"> • Use compass/clock directions to orient • Olfactory cues for doneness of food • Talking appliances and books on tape
Organize Environment	<ul style="list-style-type: none"> • Furniture against the wall; avoid clutter • Carpets, not rugs • Mark medications with rubber bands • Safety-pins on clothing labels to color code

Table 2. Low Vision Resources.

Rhode Island (RI) Resources

Services for the Blind and Visually Impaired	401-222-2300
http://www.ors.ri.gov/copied/SBVI.htm	
IN-SIGHT: http://www.in-sight.org	401-941-3322
TechACCESS: http://TechACCESS-ri.org/	401-463-0202
Ocean State Center for Independent Living	401-738-1013
RI Vision Education and Services Program for Children	401-456-8910

National Resources

<http://www.afb.org> (American Foundation of the Blind)
<http://www.medem.com>

Vendors of Low Vision Aids

<http://www.visiondynamics.com> (local)
<http://www.adaptivetech.net> (local)
<http://www.maxiaids.com> (national)
<http://www.tsbvi.edu/technology/manufacture.htm>- a useful guide to different low vision devices (Texas School for the Blind)

Reading is essential for maintaining independence, as it allows an individual to pay bills, read labels on food packages, medications, and signs. Patients who are visually impaired may experience a loss of independence, autonomy, and control, poor self-esteem, and strained social relationships.¹⁸ Reduced visual acuity has also been shown to reduce participation in religious and social activities,¹⁹ in addition to limiting one's ability to independently perform activities of daily living such as dressing and bathing.²⁰ Older individuals may have negative stereotypes associated with visual impairment such as increased helplessness, increased vulnerability to crime, the stigma of inhabiting a world of darkness, or the perception that using visual-assistive devices mark them as different or as an object of pity. Some of the aged may attempt to pass as fully sighted individuals in order to avoid having others project these stereotypes onto them.⁶

REDUCING THE PUBLIC HEALTH BURDEN OF LOW VISION

Primary care physicians (PCPs) can play a major role in reducing the public health burden of low vision. Annual eye exams for screening and prompt referral if low vision is suspected are vital. An oral history will identify patients who experience low vision under conditions of glare, low-contrast, and low-illumination. Can the patient see traffic signals at intersections? Can the patient pour her own coffee or see dials on kitchen appliances? Does the patient miss steps or

curbs, trip, or bump into things? Can the patient read the mail and the newspaper? Can the patient read a clock or dial a phone number? For patients who encounter difficulties, physicians can offer simple strategies to improve quality of life, including improving contrast, reducing glare, using non-visual cues to orient oneself, and organizing the home environment. (Table 1). If PCPs suspect low vision or a patient complains of low vision, referral to an eye care provider is necessary. An ophthalmologist referral is often necessary to qualify these patients for specific assessments and services.

RHODE ISLAND RESOURCES

In RI, several resources (Table 2) aid those with visual difficulties. As many as 90% of individuals with low vision still maintain useful vision that could be used to increase functional capacity when appropriate rehabilitation services, vision-enhancing techniques, and adaptive skills are available.²¹ Though the state of RI will provide services free of charge to eligible individuals, low vision aids and rehabilitation are not covered under Medicare. Medicare will cover the cost of a low vision evaluation performed by an eye care specialist. The RI Services for the Blind and Visually Impaired, a state agency, assesses individuals' need for services and makes referrals to several in-state organizations. INSIGHT and TechACCESS are two non-profit groups in Warwick that also offer helpful programs.

TechACCESS specifically helps individuals with disabilities gain indepen-

dence through assistive technology. The organization holds monthly public demonstrations to provide general information regarding low vision devices that are available from multiple vendors; e.g., (Table 2) **closed circuit televisions (CCTVs)** with cameras that one can use to access printed material or a classroom blackboard, hand-held magnifiers, talking calculators and watches, and software programs that magnify computer text, read out loud what is on the computer screen, or scan printed material. Patients can test devices. A loan library lets individuals try out equipment. During public demonstrations, TechACCESS also reviews community resources such as online libraries and memberships to organizations that provide digital text or audio materials. Individuals can pay a fee to receive an assistive technology evaluation to formally identify specific technology that would suit their needs. The center offers an "after school tech time" where students can make appointments to try out different devices.

INSIGHT has similar vision-enhancing devices that people can test before purchasing. In addition, the organization offers rehabilitation programs where individuals can learn to use new skills to navigate a "virtual home" complete with a kitchen, dining room, bedroom, and living room. During classes, participants develop daily living skills such as personal grooming, safety in cooking, travel techniques, handwriting, braille, use of assistive devices, and organization of surroundings so that they are easier to navigate. INSIGHT can visit a client's home and adjust the environment to be more accessible and safe. INSIGHT also offers professional social work services to provide help with the adjustment to vision loss. INSIGHT has a radio station specially geared to the RI community unable to use print media independently. The station has daily broadcasts of newspapers, books, magazines, and specialty programs that can be listened to with a radio set obtained free of charge at INSIGHT. INSIGHT's technology center provides instruction on assistive software that can be used to access the internet, email, and common computer programs. Both INSIGHT and TechACCESS also perform low vision assessments, but an ophthalmologist must refer the patients for these services. In RI,

MEDICARE will cover the cost of a low vision evaluation performed by an eye care specialist, but low vision aids and rehabilitation are currently not covered.

CONCLUSION

Standard visual acuity testing is an incomplete measure of low vision in older adults. Specialized testing by a low vision specialist assessing for vision dysfunction in everyday conditions of glare, dim light, and reduced contrast may reveal clinically important visual difficulties. For patients with visual impairment not correctable by glasses, medication, or surgery, referral to an appropriate eye care provider can direct them to a combination of visual services, rehabilitation, and environmental measures that can improve or maintain function and quality of life.

REFERENCES

1. Congdon N, O'Colmain B, et al. *Arch Ophthalmol* 2004;122:477-85.
2. Shoemaker JA, Friedman DS, et al. *Vision problems in the US: Prevalence of adult vision impairment and age-related eye disease in America*. Bethesda, MD: National Eye Institute: Schaumburg, Ill; 2002.
3. Sloan FA, Picone G, *J Am Geriatr Soc* 2005;53:1867-74.
4. Newell SW, Walsler JJ. *Ann Ophthalmol* 1985;17:186-9.
5. Tielsch JM, Javitt JC, et al. *NEJM* 1995;332:1205-9.
6. Watson GR. *J Am Geriatr Soc* 2001;49:317-30.
7. Schneck ME, Haegerstrom-Portnoy G. *Ophthalmol Clin North Am* 2003;16:269-87.
8. Knudtson MD, Klein BE, Klein R. *Arch Ophthalmol*. Feb 2006;124(2):243-249.
9. McCarty CA, Nanjan MB, Taylor HR. *Br J Ophthalmol*. Mar 2001;85:322-6.
10. Tinetti ME. *NEJM* 2003;348:42-49.
11. Ivers RQ, Norton R, et al. *Am J Epidemiol* 2000;152:633-9.
12. Ip SP, Leung YF, Mak WP. Depression in institutionalised older people with impaired vision. *Int J Geriatr Psychiatry* 2000;15:1120-4.
13. Lin MY, Gutierrez PR, et al. *J Am Geriatr Soc* 2004;52:1996-2002.
14. LaPlante MP. Prevalence of conditions causing need for assistance in activities of daily living. In: LaPlante MP, ed. *Data on disability from the National Health Interview Survey, 1983-85*. Washington, DC: National Institute on Disability and Rehabilitation Research; 1988:1-12.
15. Williams RA, Brody BL, et al. *Arch Ophthalmol* 1998;116:514-20.
16. Wang JJ, Mitchell P, et al. *Invest Ophthalmol Vis Sci* 1999;40:12-9.
17. Vu HT, Keeffe JE, McCarty CA, Taylor HR. Impact of unilateral and bilateral vision loss on quality of life. *Br J Ophthalmol* 2005;89:360-3.
18. Leinhaas MA, Hedstrom NJ. *Geriatrics* 1994;49:53-6.
19. West SK, Munoz B, et al. *Invest Ophthalmol Vis Sci* 1997;38:72-82.
20. Jacobs JM, Hammerman-Rozenberg R, et al. *Ageing Clin Exp Res* 2005;17:281-6.
21. Scott IU, Smiddy WE, et al. *Am J Ophthalmol* 1999;128:54-62.
22. American Academy of Ophthalmology. *Vision Rehabilitation for Adults, Preferred Practice Pattern*. San Francisco: American Academy of Ophthalmology; 2001

Christina S. Moon is a medical student at the Warren Alpert Medical School of Brown University.

Angela Turalba, MD, is a resident in Ophthalmology at the Massachusetts Eye and Ear Infirmary, Harvard Medical School.

Kent L. Anderson, MD, PhD, is a Clinical Assistant Professor of Surgery (Ophthalmology), Brown University.

Edward Feller, MD, is a Clinical Professor of Medicine, Brown University. He is Co-director of the Community Health clerkship and Director, Division of Gastroenterology, Miriam Hospital.

Disclosure of Financial Interests

Christina S. Moon, Angela Turalba, MD, Kent L. Anderson MD, PhD, Edward Feller, MD, have no financial interests to disclose.

CORRESPONDENCE

Edward Feller, MD
Box G-S121, Brown University
Providence, RI 02912
e-mail: Edward_Feller@brown.edu
Phone: (401) 863-6149

Ms. Moon submitted an earlier version of this manuscript to partially satisfy requirements of the Community Health clerkship



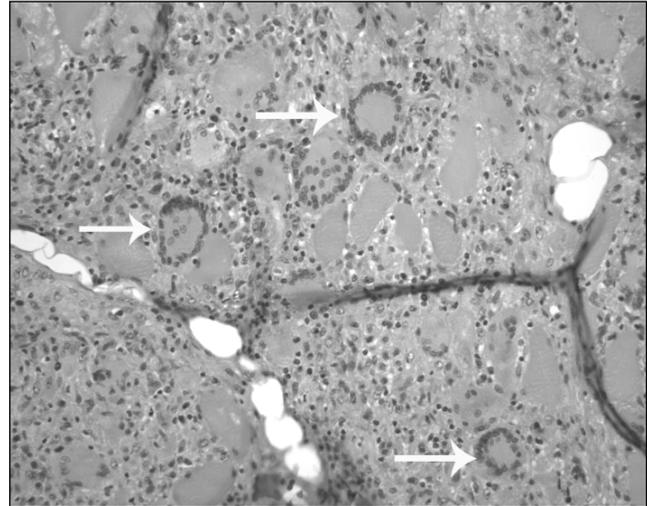


Images In Medicine

Granulomatous Myositis in Association with Chronic Graft vs. Host Disease

Robert Bagdasaryan, MD, and John E. Donahue, MD

A 34-year old woman with a history of acute myelomonocytic leukemia, S/P autologous bone marrow transplantation, followed by allogeneic transplantation from her brother one year later, developed graft-versus-host disease (GVHD) three months after the second transplantation. There was no evidence for GVHD outside the GI tract. Further immunosuppression was initiated with cyclosporine and prednisone, but she developed a second bout of GVHD 7 months later. A taper of cyclosporine and prednisone was underway while an immunosuppressant, mycophenolate mofetil, was introduced. One year later, the patient developed a fever of 101° and complained of muscle soreness and other flu-like symptoms, with profound proximal upper and lower extremity muscle weakness manifested by difficulty getting out of chairs, climbing stairs, and lifting her arms above her head. Neurologic examination revealed a decrease in strength in her proximal muscles (3/5) and tenderness to palpation in both proximal and distal muscle groups. Creatinine kinase was 3,826 IU/L, and a myoglobin assay revealed 1.59 micrograms/ml of free serum myoglobin. Muscle biopsy revealed an extensive inflammatory infiltrate with granuloma formation and numerous multinucleated giant cells (see figure). At this point, the prednisone was increased to 15 mg/day, and she was kept on mycophenolate mofetil. Clinically, she improved somewhat but not to baseline. Granulomatous myositis has been reported once previously in association with chronic GVHD.¹



Granulomatous myositis. There is widespread destruction of skeletal muscle fibers associated with an extensive inflammatory infiltrate and numerous multinucleated giant cells (arrows). H&E stain, x200.

REFERENCE

1. Kaushik S, Flagg E, et al. Granulomatous myositis. *Skeletal Radiol* 2002; 31:226-9.

Robert Bagdasaryan, MD, formerly a fellow in neuropathology, at Rhode Island Hospital, is an attending pathologist at Kent. John Donahue, MD, is a neuropathologist at RI Hospital.

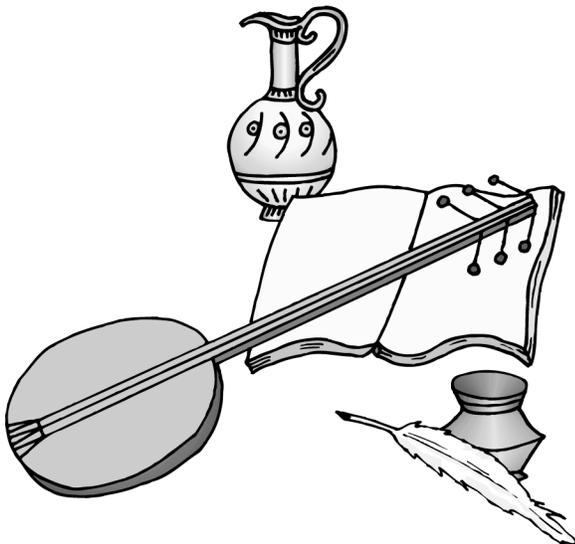
Disclosure of Financial Interests

Robert Bagdasaryan, MD, has no financial interests to disclose.

John Donahue, MD, Grant Support: NIH/NIA.

CORRESPONDENCE

John Donahue, MD
e-mail: Jdonahue3@lifespan.org



Information for Contributors

Medicine & Health/Rhode Island

Medicine & Health/Rhode Island is a peer-reviewed publication, listed in the *Index Medicus*. We welcome submissions in the following categories.

CONTRIBUTIONS

Contributions report on an issue of interest to clinicians in Rhode Island: new research, treatment options, collaborative interventions, review of controversies. Maximum length: 2500 words. Maximum number of references: 15. Tables, charts and figures should be camera-ready, or as separate files (jpg, tif, pdf). Photographs should be saved as separate files. Powerpoint files and slides are not accepted.

CREATIVE CLINICIAN

Clinicians are invited to describe cases that defy textbook analysis. Maximum length: 1200 words. Maximum number of references: 6. Photographs, charts and figures may accompany the case.

POINT OF VIEW

Readers share their perspective on any issue facing clinicians (e.g., ethics, health care policy, relationships with patients). Maximum length: 1200 words.

ADVANCES IN PHARMACOLOGY

Authors discuss new treatments. Maximum length: 1200 words.

ADVANCES IN LABORATORY MEDICINE

Authors discuss a new laboratory technique. Maximum length: 1200 words.

For the above articles: Please submit 4 hard copies and an electronic version (Microsoft Word or Text) with the author's name, mailing address, phone, fax, e-mail address, and clinical and/or academic positions to the managing editor, Joan Retsinas, PhD, 344 Taber Avenue, Providence, RI 02906. phone: (401) 272-0422; fax: (401) 272-4946; e-mail: retsinas@verizon.net

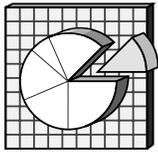
IMAGES IN MEDICINE

We encourage submissions from all medical disciplines. Image(s) should capture the essence of how a diagnosis is established, and include a brief discussion of the disease process. Maximum length: 250 words. The submission should include one reference. Please submit the manuscript and one or two clearly labelled cropped files with the author's name, degree, institution and e-mail address to: John Pezzullo, MD, Department of Radiology, Rhode Island Hospital, 593 Eddy St., Providence, RI 02903. Please send an electronic version of the text and image to: JPezullo@lifespan.org.

FINANCIAL DISCLOSURE FORMS

All authors must submit a financial disclosure statement of possible conflicts. The form is available from the managing editor, or the Rhode Island Medical Society website (www.rimed.org).





Resident and Family Satisfaction with Nursing Home Care in Rhode Island: Differing Views of Performance

Margaret S. Richards, PhD, and Gwen C. Uman, RN, PhD

The publication of family and resident satisfaction with nursing home care in late 2006 was the first report of its kind for Rhode Island's 92 nursing homes.¹ The two-year project, conducted with Quality Partners of Rhode Island and Vital Research, LLC, of California, consisted of self-administered surveys mailed to family members or friends of residents and face-to-face interviews with residents, including residents with mild-to-moderate cognitive impairment. The family and resident surveys were nearly identical in terms of dimensions of satisfaction ("domains") assessed and methods for scoring performance.² In an earlier publication, we presented information from the surveys on priority indices developed to guide quality improvement (QI) efforts in the state's nursing homes and found that the high priority domains for QI efforts identified by residents and their families differed.³ Here we present more specific information on the nature and extent of those differences.

Survey research in the long-term care setting can be challenging, particularly when residents are cognitively or physically impaired and need assistance in reading or answering the questions. The cost of conducting a cognitively adapted face-to-face interview can be prohibitive, however, so patient satisfaction survey organizations often default to a mailed survey for residents as well as family members. These organizations are keenly aware of the potential for loss of information from the impaired residents and for introduction of bias from staff persons, family members, or other residents who may provide assistance in filling out the survey. Rhode Island's nursing homes accepted the additional expense of a cognitively adapted face-to-face resident interview in order to include the broadest possible group of residents. Here we examine whether or not these two populations generally agreed or disagreed on the quality of care delivered in order to determine if future survey efforts might reasonably be limited to more cost-effective mailed surveys for residents or to surveys of family members only.

METHODS

The family and resident surveys, adapted from surveys developed for use in Ohio,⁴ assess satisfaction with care in eleven common domains or topics. On a home-by-home basis, we looked at the level of agreement between the residents surveyed (as a group) in that home versus the family

members surveyed (as a group) in that home. A total of 3,057 residents completed interviews, and 4,082 family members or friends returned completed surveys. The level of agreement across 92 homes within each survey domain and for total satisfaction was tested with a prevalence and bias-adjusted Kappa (PABAK) statistic.⁵ The Kappa statistic compares observed agreement versus expected agreement, taking into account the fact that two observers, or two groups of observers, will sometimes agree or disagree simply by chance. A Kappa of 0.00 or lower indicates poor agreement between residents and families, whereas a Kappa near 1.00 suggests near-perfect agreement.⁶ Because the satisfaction score is a continuous variable ranging from 1.00 points (low) to 4.00 points (high) but the Kappa statistic is based on a categorical outcome, we dichotomized all scores as less than 3.70 (out of 4.00) versus greater than or equal to 3.70. (Note: Because of the de-identified nature of the survey results, we were unable to examine agreement for resident-family pairs, which might provide more accurate analysis of agreement than our group analysis at the nursing home level. Moreover, our decision to dichotomize the scores as above or below 3.70 does not take advantage of a weighted Kappa, in which partial credit for agreement is given when ordinal responses are in adjacent rather than extreme categories of performance. Such weighting is beyond the scope of this inquiry.)

RESULTS

Overall, family and residents were more likely to agree ($K > 0$) than to disagree ($K < 0$). (Table 1) However, reasonable agreement, defined as a Kappa of 0.50 or higher between family members and residents, existed in only two of twelve scores. There was substantial agreement with respect to Meals and Dining ($K = 0.674$) and mod-

Table 1.
Comparative levels of satisfaction for nursing home residents and families, and Kappa statistic, by satisfaction domain, Rhode Island, 2006.

Satisfaction Domain	Levels of Satisfaction (Number of Nursing Homes)				Kappa Statistic
	A Residents: HIGH Families: HIGH	B Residents: HIGH Families: LOW	C Residents: LOW Families: HIGH	D Residents: LOW Families: LOW	
Meals and Dining	4	12	3	73	0.674
Activities	6	18	3	65	0.544
Direct Care	24	16	14	38	0.348
General Satisfaction	43	27	4	18	0.326
Administration	50	18	14	10	0.304
Resident Environment	20	36	4	32	0.130
Choice	13	9	33	37	0.087
Social Services	27	12	22	13	0.081
Therapy	1	35	2	39	0.039
Laundry	15	46	1	29	-0.033
Facility Environment	25	64	1	2	-0.413
Total Satisfaction	20	24	8	40	0.304

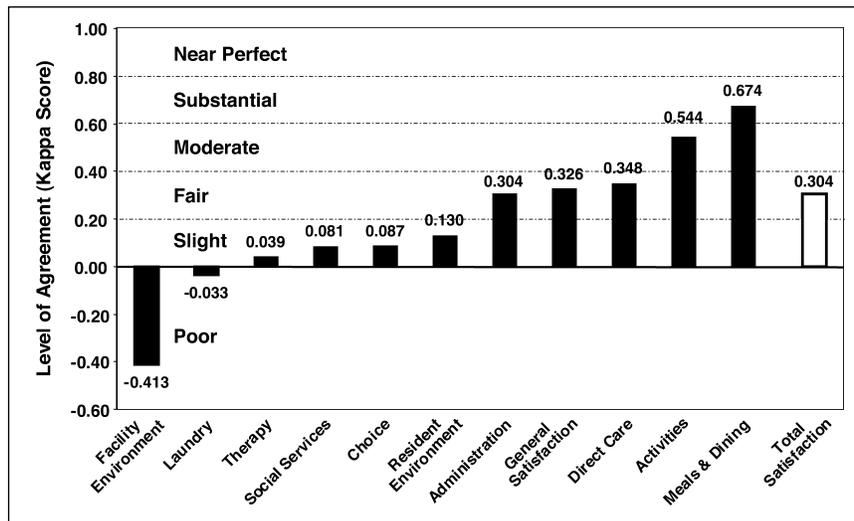


Figure 1. Level of agreement (Kappa statistic) between nursing home residents and families on satisfaction with care, by satisfaction domain, Rhode Island, 2006.

erate agreement with respect to Activities ($K = 0.544$). (Figure 1) The two groups surveyed were in least agreement regarding Facility Environment ($K = -0.413$) and Laundry services ($K = -0.033$), where family members appear to be less satisfied than the residents.

The numbers in the columns in Table 1 labeled A, B, C, and D correspond to the nursing home cell counts of the 2x2 matrix with which each Kappa is calculated. Rating a domain 'high' indicates that the respondent group (family or resident) scored that domain a 3.70 (out of 4.00) or higher, on average; a low rating corresponds to an average score of less than 3.70. With the exception of the Social Services ($n=74$), Therapy ($n=77$), and Laundry ($n=91$) domains, cell counts added up to 92, the total number of participating nursing homes, for each row of Table 1. (The Social Services and Therapy questions were not answered by all residents, so that the numbers of responses were too few to yield domain scores at the smaller nursing homes.) Note that the highest Kappa—or highest level of agreement—tends to occur where columns A and D produce

a large sum. For the Meals and Dining domain, for example, in 77 of 92 homes the family respondents as a group and the resident respondents as a group were in agreement in rating satisfaction with the homes' food services either high or low.

DISCUSSION

Survey researchers have noted previously that visitors—even regular visitors—are not good substitutes for assessment of elderly patient satisfaction with nursing home care.⁷ In our previous report, we noted that Rhode Island's nursing home residents and families have distinctly different improvement priorities for nursing home care.³ It appears that the additional resources needed to measure the satisfaction of the nursing home

residents were warranted in this state, for residents and their families have unique expectations of and experiences with long-term care.

Rhode Island's nursing home administrators understood the fundamental differences in family and resident expectations of long term care, and committed in January 2007 to follow up with and address each group's concerns in both separate and joint learning circles. We applaud their diligence and sensitivity in so doing.

Margaret S. Richards, PhD, is former Senior Scientist at Quality Partners of Rhode Island.

Gwen C. Uman, RN, PhD, is Partner at Vital Research, LLC, Los Angeles, CA.

Disclosure of Financial Interests

Margaret S. Richards, PhD, and Gwen C. Uman, RN, PhD, have no financial interests to disclose.

REFERENCES

1. <http://www.health.ri.gov/chic/performance/quality/quality27.pdf>.
2. <http://www.health.ri.gov/chic/performance/quality/quality27tech.pdf>.
3. Richards MS, Uman GC. Resident and family satisfaction with nursing home care in Rhode Island: prioritizing improvement. *Medicine & Health/RI* 2007 90:223-4
4. Scripps Gerontology Center and The Margaret Blenkner Research Institute (under contract with the Ohio Department of Aging).
5. See http://www.mhri.edu.au/biostats/DAG_Stat/.
6. Viera AJ, Garrett JM. Understanding interobserver agreement. *Family Med* 2005 37:360-3.
7. Gasquet I, Dehé S, et al. Regular visitors are not good substitutes for assessment of elderly patient satisfaction with nursing home care and services. *J Gerontol Series A: Biological Med Sciences* 2003 58:M1036-M1041.



Chronic Dizziness In Older Persons

Aman Nanda, MD, CMD

DS, an 85-year-old woman, complains of intermittent dizziness, and three falls over 6 months. She lives with her son, who witnessed the falls, which occurred in the home. There has been no loss of consciousness or serious injury. She has hypertension, coronary artery disease, mild bilateral cataracts, chronic backache, diabetes mellitus, impaired hearing, and mild cognitive impairment. She has been using a cane for 7-8 months. Mrs. S says sometimes she feels woozy and light-headed, other times she feels the room is spinning. The episodes usually occur when she tries to stand from sitting or lying down. She denies nausea or vomiting. Medications include gilepizide xl 5 mg daily, metformin 500 mg twice daily, baby aspirin, metoprolol 12.5 mg. twice a day, nifedipine XL 60 mg. daily, ranitidine 150 mg. twice daily, acetaminophen prn, multivitamin tablet, and calcium plus vitamin D twice a day.

Dizziness is the subjective sensation of instability of posture or of illusory motion. A nonspecific term, it includes lightheadedness, vertigo, dysequilibrium, spinning, giddiness, faintness, and other sensations. Dizziness is often classified, as acute (present for less than one or two months), or chronic (present for more than one or two months). The causes of acute dizziness are usually similar for patients of all ages. Therefore, this discussion will be limited to chronic dizziness.

Dizziness is one of the most common presenting complaints in primary care practice for persons aged 65 years and older.¹ The overall prevalence ranges from four to 30%, and it is more common in women.^{2,3} The complaint increases by 10% for every 5 years of increasing age. Chronic dizziness has been associated with increased risk for falls, increased fear of falling, orthostatic hypotension, syncope, stroke, and disability, and has a negative effect on quality of life among older persons, as well as worsening of depressive symptoms.^{4,5}

CHRONIC DIZZINESS AS A GERIATRICS SYNDROME

Most clinicians assume that dizziness is a symptom of one or more discrete diseases. Because multiple systems maintain balance, multiple conditions usually contribute to chronic dizziness in elderly persons. Chronic dizziness has been associated with multiple risk factors, including angina, myocardial infarction, stroke, arthritis, diabetes, syncope, anxiety, depressive symptoms, impaired hearing, alcohol consumption, smoking, nervousness and use of several classes of medications. In one study, 51% of older adults with four or more of the following problems reported dizziness: depressive symptoms, cataracts, abnormal gait, postural hypotension, diabetes, past myocardial infarction, and three or more medications. Thus, chronic dizziness is best considered a *geriatrics syndrome*; a combination of symptoms and signs that often result from impairment

or disease in multiple systems.^{6,7,8}

TYPES OF DIZZINESS

Dizziness is classically categorized into four subtypes: vertigo, pre-syncope, disequilibrium, and other.⁹ A fifth category is 'mixed dizziness'.

1. **Vertigo** is a spinning sensation, either of the patient with respect to the environment (subjective vertigo) or of the environment with respect to the patient (objective vertigo). Vertigo, often sudden in onset, is episodic, and when severe may be associated with nausea and vomiting.
2. **Pre-syncope** is a feeling of impending or imminent faintness or lightheadedness. It is thought to result from hypoperfusion of the brain; e.g., cardiovascular conditions.
3. **Dysequilibrium** is a feeling of unsteadiness not associated with any abnormal head sensations. Dysequilibrium usually results from abnormalities in the proprioceptive system.
4. **Other** includes vague feelings other than vertigo, presyncope or dysequilibrium. The patient may describe, "floating," "wooziness," "spaciness," "whirling" or other non-specific sensations.
5. **Mixed** includes combinations of two or more of the above types, and is the most common type of dizziness reported by older adults.¹⁰ It is felt to result from the presence of combinations of diseases affecting multiple systems.

CAUSES OF DIZZINESS

Dizziness results from either discrete or combined effects of impairments or disorders of the multiple systems responsible for maintaining balance. Discrete causes of chronic dizziness can be divided into vestibular disorders, **central nervous system disorders (CNS)**, disorders causing orthostatic hypotension, psychogenic causes, systemic causes, medications and miscellaneous. Common vestibular diseases causing chronic dizziness in older persons include benign paroxysmal positional vertigo, recurrent vestibulopathy, and ototoxic medications. The CNS disorders include cerebrovascular disease and parkinsonism. Two important other entities are postural dizziness without orthostatic changes and postprandial hypotension. The most common psychogenic conditions in older persons are depressive and anxiety disorders. **Benign Paroxysmal Positional Vertigo (BPPV)** is characterized by brief bouts (seconds) of sudden vertigo provoked by changes in the head position (e.g., rolling over in bed into a lateral position, gazing upward or leaning forward). Rotational nystagmus and nausea and vomiting are common. Patients typically experience recurrent bouts

of positional vertigo over days to months, with quiescent periods between episodes.

The pathophysiologic mechanism of BPPV is believed to be free-floating particulate matter, most likely dislodged otoliths secondary to degenerative changes (tiny calciferous granules that form part of the receptor mechanism in the otolith apparatus) in the endolymph of the posterior semicircular canal. The exact mechanism causing vertigo is unknown, but thought to result from movement of debris causing alterations in endolymphatic pressure. *Postural Dizziness without orthostasis* occurs in some older persons - dizziness on standing, but blood pressure changes do not meet criteria of postural hypotension.¹¹ A postural drop in blood pressure is not always symptomatic, and, conversely, all dizziness with postural change is not due to blood pressure changes.

Postprandial hypotension is usually defined as an orthostatic change in blood pressure after rising within one to two hours of eating a meal; dizziness is common, as are falls and syncope.

Medications: Several classes of medications, such as narcotics, anxiolytics, antidepressants, antihypertensives, aminoglycoside antibiotics, chemotherapy, and NSAIDs produce dizziness as a side effect. Medications may cause dizziness through various mechanisms; e.g., antihistamines and tricyclic antidepressants can cause dizziness through their anticholinergic side effects. Aminoglycosides, NSAIDs, quinine and loop diuretics can have ototoxic effects if used in high dosages or for long periods. Over-the-counter cold preparations can cause dizziness because of their anticholinergic effects.

In older persons, other contributors to dizziness include vision impairment, hearing loss, cervical arthritis and anemia. That dizziness can be a geriatric syndrome does not preclude the possibility that a single disease may sometimes be responsible. Rather, it acknowledges that many symptoms, such as dizziness, falls, delirium in older persons cannot be explained solely by a single disease.

EVALUATION

The goal is to identify and eliminate the cause of dizziness. If not possible, the goal should then be to minimize dizziness and to avoid consequences, such as falls, injury, functional disability and increased depressive symptoms. A stepwise approach to the evaluation of chronic dizziness is recommended. Careful history, physical examination and routine laboratory evaluation often can identify possible diseases or contributing factors to dizziness. Rarely does a discrete cause require extensive further evaluation.

The history should seek a precise characterization of the sensation of dizziness, although sometimes difficult and frustrating. Is the dizziness episodic or continuous? In BPPV, Meniere's disease or CNS disorders, dizziness is episodic, while psychogenic or drug-induced dizziness is usually continuous. Psychological dizziness typically begins insidiously, but acoustic neuroma should be ruled out.

Duration and frequency of dizziness, and any associated symptoms (tinnitus, diplopia, hearing loss, ear fullness, dysarthria, syncope) are all important. Recurrent episodes of dizziness lasting less than one minute are common in BPPV, while recurrent episodes of dizziness associated with fluctuating hear-

ing loss, tinnitus or ear fullness suggest Meniere's disease. Precipitating or provocative factors, such as standing, rolling over in bed or changing the position of the head or neck should be sought. Comorbid conditions (e.g., anemia, cardiac diseases, diabetes, renal disorders, anxiety, depression) can predispose to or exacerbate dizziness. A careful review of all medications, including over-the-counter drugs, is essential.

Physical examination should include orthostatic blood pressure measurement. Ear wax should be removed. Hearing, and near and distant vision should be tested.

Spontaneous nystagmus may be present. The nystagmus in central lesions is vertical and is not suppressed by visual fixation, while that in peripheral vestibular lesions it is usually horizontal or rotatory, and is suppressed by visual fixation. The head thrust test also tests vestibular function. The patient fixates on the examiner's nose, and the head is moved rapidly by the examiner about 10 degrees to the left or right. In a normally functioning vestibular system, the eyes will remain fixed on the target. With vestibular disease, the eyes move with the head away from the target, followed by a corrective saccade back to the target.

Cranial nerves should be examined for diplopia, dysarthria, and facial weakness, along with cerebellar signs; e.g., gait ataxia, truncal ataxia, or dysmetria, which suggest etiologies such as a cerebellar stroke or cerebellopontine angle tumors. Gait and balance examinations should be done. A positive Romberg's sign suggests a vestibular or proprioceptive etiology.

One should also check for range of neck motion. A decrease in the range of motion, with or without symptoms of dizziness, may be due to a cervical process or, secondarily, to vestibular dysfunction. Apart from the history and physical examination, certain provocative tests can be done at bedside to evaluate the vestibular system.

In addition to head-thrust, **Dynamic visual acuity testing** can be done. The patient reads a fixed eye chart while the examiner moves the head horizontally at a frequency of 1-2 Hz. A drop in acuity of two rows or more from baseline suggests abnormal vestibulo-ocular reflex. Dix-Hallpike test can confirm BPPV.¹²

A small battery of laboratory tests should be performed on all patients with chronic dizziness - hematocrit, glucose, renal function, electrolytes, thyroid function, and vitamin B12 and RBC folate levels. EKG should be done, if a cardiovascular etiology is suspected; not every dizzy patient needs holter monitoring and tilt table test. Audiometry should be done if Meniere's disease or acoustic neuroma is suspected.

Specialized tests like vestibular function tests (electronystagmography, caloric test, rotational chair tests, computerized posturography) are indicated only if vestibular dysfunction is high on list. Neuroimaging (CT or MRI) is only indicated if history and physical examination suggests stroke or cerebellopontine angle tumor.

TREATMENT

Treatment should be directed toward a specific cause, but if evaluation is uninformative, a therapeutic trial can be helpful. The most effective treatment approach is to ameliorate one or more potential etiological or contributor factors.

Vision and hearing should be corrected. Dizziness secondary to medication usually responds to dosage adjustment or to withdrawal of medication. Vestibular suppressants like antihistamines (e.g., meclizine) are commonly used for symptomatic relief, but effectiveness in chronic dizziness is not documented. Long-term use is not indicated because of CNS side effects and because they suppress central and vestibular adaptation and thus may worsen chronic dizziness.

Vestibular rehabilitation is an important and effective management strategy for patients with peripheral and central vestibular causes of dizziness. Combinations of exercises involving head and eye movements designed to provoke dizziness are used. Initially, the exercises may exacerbate dizziness, but over time (weeks to months) movement-related dizziness improves, likely because of central adaptation. The **Epley's Canalith repositioning procedure**, and **Brandt's exercises** are currently recommended treatments for benign positional vertigo. These bedside maneuvers, by the effects of gravity move free-floating debris from the posterior semicircular canal into the utricle of vestibule, where it will no longer alter endolymphatic pressure in the semicircular canals.¹²

Surgical therapy is rarely needed, and is limited to excision of cerebellopontine angle tumors; ablative procedures (transmastoid labyrinthectomy and partial vestibular neurectomy for uncontrolled Meniere's Disease or peripheral vestibulopathy); and non-ablative endolymphatic sac decompression.

Patient Education: Patients can modify activities; e.g., for postural dizziness, patients should rise slowly from sitting or supine positions. They should avoid looking up, reaching up, or bending down, but should be cautioned not to habitually avoid other movements, such as head turning so as not to compromise central adaptation, thereby worsening dizziness. Above all, patients should avoid over the counter drugs that may exacerbate dizziness.

REFERENCES

1. Sloane PD. Dizziness in primary care. *J Fam Prac* 1989;29:33-8.
2. Sloane P, Blazer D, George LK. Dizziness in a community elderly population. *J Am Geriatr Soc* 1989;37:101-8.
3. Colledge NR, Wilson JA, et al. The prevalence and characteristics of dizziness in an elderly community. *Age Aging* 1994;23:117-20.
4. Grimby A, Rosenthal U. Health related quality of life and dizziness in old age. *Gerontology*. 1995;41:286-298.
5. Tinetti ME, Mendes de Leon CF, et al. Fear of falling and fall related efficacy in relationship to functioning among community-living elders. *J Gerontol* 1994;49:M140-7.
6. Tinetti ME, Williams CS, Gill TM. Dizziness among older adults. *Ann Intern Med* 2000.132:337-44.
7. Kao AC, Nanda A, et al. Validation of dizziness as a possible geriatric syndrome. *J Am Geriatr Soc* 2001;49:72-5.
8. Sloane PD, et al. Dizziness. *Ann Intern Med* 2001; 134:823.
9. Drachman DA, Hart CW. An approach to the dizzy patient. *Neurol* 1972;22:323-34.
10. Sloane PD, Baloh RW. Persistent dizziness in geriatric patients. *J Am Geriatr Soc*. 1989;37:1031-1038.
11. Ensrud KE, Nevitt MC, et al. Postural hypotension and postural dizziness in elderly women. *Arch Intern Med* 1992;152:1058-64.
12. Furman JM, Cass SP. Benign paroxysmal positional vertigo (Review article). *NEJM* 1999; 341:1590-6.

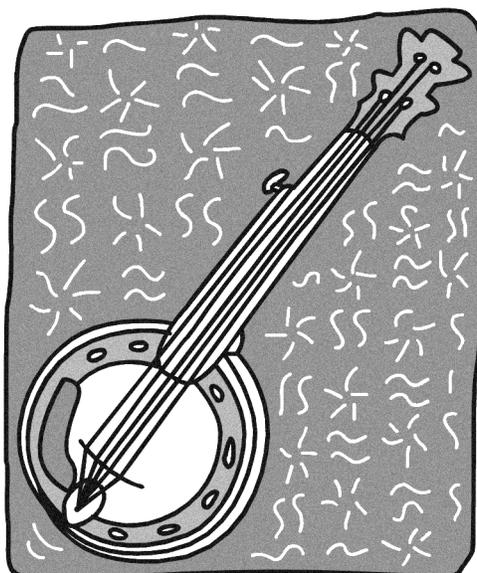
Aman Nanda, MD, CMD, is Assistant Professor of Medicine, The Warren Alpert Medical School of Brown University.

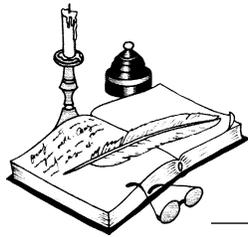
Disclosure of Financial Interests

Aman Nanda, MD, MCD, Grant Research: Amgen; Speakers' Bureau: Forrest

8SOW-RI-GERIATRICS -092007

THE ANALYSES UPON WHICH THIS PUBLICATION IS BASED were performed under Contract Number 500-02-R102, funded by the Centers for Medicare & Medicaid Services, an agency of the U.S. Department of Health and Human Services. The content of this publication does not necessarily reflect the views or policies of the Department of Health and Human Services, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government. The author assumes full responsibility for the accuracy and completeness of the ideas presented.





Physician's Lexicon

The Words of Fear

Fear is a pervasive emotional response to a bewildering variety of perceived external threats. To most, a mild threat will evoke a mild degree of fear; yet in others, that same mild threat may summon up an overwhelming, irrational fear, a phobia. One man's joy may be another man's phobia. And indeed the numberless variety of human phobias just about equals the number of items that provide rapture to others.

The Greek word, *phobos*, meaning fear or panic, has given rise to two noun forms in English: the specific clinical state of the fear itself [e.g., claustrophobia] and those who are afflicted by that specific fear [e.g., arachnophobes].

The fear of sin [peccatophobia] employs a Latin word, *peccare* [to sin] as in English words such as impeccable [meaning faultless, without sin], and peccadillo, a minor sin. The 19th Century English general who captured the city of Sindh [in current Pakistan], cable-

grammed his queen with the terse victory message, "*Peccavi*", meaning, I have sinned [Sindh].

Cypridophobia, the fear of sex, is based upon the root, Cypris, another name for Aphrodite and her home island, Cyprus. A fear of nudity, gymnophobia, is derived from the Greek root, *gymnos*, as in English words such as gymnasium, gymnosperm [a plant with naked seeds] and gymnocyte.

Thanatophobia, the fear of death, stems from a Greek root meaning to be extinguished or to be dead, as in English words such as euthanasia and thanatoid. Nosophobia, fear of disease, appears also in the word, nosology, the classification of diseases. A fear of darkness is called scotophobia. English words with the same Greek root include: Scotoma [a blind spot], scotograph [an instrument for writing in the dark] and scotodinia [vertigo associated with dimness of vision.] Nictophobia is yet another term for

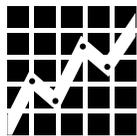
fear of darkness, is based on the Latin, *nictare*, meaning to blink or close one's eyes. The nictitating membrane uses the same root.

Fear of aliens is called xenophobia. The Greek root, *xeno-*, meaning stranger or guest, appears in English words such as xenon and xenogamy, defining botanical cross-fertilization.

The phobias are endless in number. Just those beginning with the letter 'a' include: acarophobia, acrophobia, agoraphobia, aichmophobia, algophobia, ailurophobia, androphobia, anthophobia, anuptaphobia, apiphobia, aquaphobia and arachibutyrophobia [fear of peanut butter sticking to one's palate.]

With so many diverse fears of things both common and uncommon, there is little left to fear except [in the immortal words of F. D. Roosevelt] fear itself; and for this the Greeks indeed have a word: phobophobia.

— STANLEY M. ARONSON, MD



RHODE ISLAND DEPARTMENT OF HEALTH
DAVID GIFFORD, MD, MPH
DIRECTOR OF HEALTH

VITAL STATISTICS

EDITED BY COLLEEN FONTANA, STATE REGISTRAR

Rhode Island Monthly Vital Statistics Report Provisional Occurrence Data from the Division of Vital Records

Underlying Cause of Death	Reporting Period			
	September 2006	12 Months Ending with September 2006		
	Number (a)	Number (a)	Rates (b)	YPLL (c)
Diseases of the Heart	207	2,720	254.3	3,109.5
Malignant Neoplasms	194	2,276	212.8	6,114.5
Cerebrovascular Diseases	27	407	38.0	457.5
Injuries (Accidents/Suicide/Homicide)	44	463	43.3	6,838.0
COPD	36	475	44.4	440.0

Vital Events	Reporting Period		
	March 2007	12 Months Ending with March 2007	
	Number	Number	Rates
Live Births	1,048	13,169	12.3*
Deaths	833	10,072	9.4*
Infant Deaths	(9)	(87)	6.6#
Neonatal Deaths	(7)	(59)	4.5#
Marriages	273	6,923	6.5*
Divorces	196	3,029	2.8*
Induced Terminations	637	4,814	365.6#
Spontaneous Fetal Deaths	74	799	60.7#
Under 20 weeks gestation	(70)	(736)	55.9#
20+ weeks gestation	(4)	(63)	4.8#

(a) Cause of death statistics were derived from the underlying cause of death reported by physicians on death certificates.

(b) Rates per 100,000 estimated population of 1,067,610

(c) Years of Potential Life Lost (YPLL)

Note: Totals represent vital events which occurred in Rhode Island for the reporting periods listed above. Monthly provisional totals should be analyzed with caution because the numbers may be small and subject to seasonal variation.

* Rates per 1,000 estimated population

Rates per 1,000 live births



MEDICAL MALPRACTICE TOPICS

INFORMATION FOR RHODE ISLAND PHYSICIANS FROM BABCOCK & HELLIWELL

ELECTRONIC MEDICAL RECORDS

John Tickner, CPCU, President, Babcock & Helliwell

The use of electronic records in healthcare lags far behind the computerization of information in most other industries. Less than a third of the nation's hospital emergency and outpatient departments use electronic medical records, and even fewer doctors' offices do, according to a report by the Centers for Disease Control and Prevention.

In Rhode Island, electronic medical records are acceptable provided they are secure, HIPPA-compliant, readily retrievable, transferable upon request, and supported by a system of regular backup to assure record integrity.

Proponents of electronic medical records say they free medical personnel from the crush of paper, give doctors instant access to potentially lifesaving information, and reduce administrative costs and the chance for medical errors due to illegible written information.

From a professional liability perspective, computerized medical records may pose less risk than multiple medical histories in different locations, containing different or even contradictory information. However, electronic records do introduce special concerns and potential risks.

Failure to maintain the confidentiality of patient information is the primary risk. The American College of Physicians-American Society of Internal Medicine Ethics Manual spells out the issue: "Confidentiality is increasingly difficult to maintain in this era of computerized record keeping and electronic data processing, faxing of patient information, third-party payment for medical services, and sharing of patient care among numerous medical professionals and institutions. Physicians should be aware of the increased risk for invasion of patients' privacy and should help ensure confidentiality."

Every practice should have a patient confidentiality policy that includes the access and use of electronic medical records. This policy should be reviewed with staff at least annually and documentation of these reviews should be placed in the employee's personnel file.

The electronic medical record system should be designed to prevent unauthorized electronic access by an outside intruder (or "hacker"). An encryption system should

encode the data for transmission or storage. Physical restrictions (computer terminals locked) should be in place. Policies should be developed to insure the existence of system security measures.

A policy should be developed that limits access to patient information to only that which the user needs to review.

Passwords are the most common method of restricting access to electronic medical records. A policy should be developed that describes who is an authorized user, how passwords should be created, how frequently they should be changed, and how users are terminated.

eRisk Guidelines

In 1999, the AMA and several national medical specialty societies founded Medem to develop and provide secure, online communications services for use by physicians and other healthcare providers. In 2000, Medem helped establish the eRisk Working Group for Healthcare, which now includes 30 medical professional liability insurance companies and more than a dozen medical societies. The group was formed to address potential online liability issues and concerns associated with physician-patient interaction and communication via the Web, and to establish a common set of guidelines for use by physicians and practices as they communicate online.

The eRisk Working Group for Healthcare has produced the eRisk Guidelines for Online Communication, which is copywritten by Medem and updated frequently. With its permission, you may view the guidelines on the Babcock & Helliwell Web site. Go to the "Useful Links" page in the Medical Malpractice section of the site.

John Tickner, CPCU, is president of Babcock & Helliwell, a privately held independent insurance agency established in 1892 that provides professional insurance-related services of all kinds. Babcock & Helliwell is an agency for ProMutual Group, New England's largest medical malpractice insurance provider and the second-largest provider in Rhode Island. The views expressed are solely those of John Tickner, CPCU, and Babcock & Helliwell.

Babcock & Helliwell

Insurance and Risk Management

Representing...  ProMutualGroup®

138 Main Street, Wakefield, RI 02879

[tel] 401.782.1800

www.babcockhelliwell.com

NINETY YEARS AGO, SEPTEMBER 1917

Charles D. Cooke, AM, MD, in "The Acute Abdomen, with Report of [Eight] Cases," urged readers to find the cause, e.g.; acute gangrenous and perforative appendicitis; twisting of the pedicle of an ovarian cyst; rupture of an ulcer (including typhoid ulcer); thrombosis of the mesenteric vessels; strangulated hernia; renal crises; pneumonia (especially in children). He stressed early diagnosis: "Much valuable time will be saved in the operation if the diagnosis can be accurately established beforehand. Morphine should not be given to mask symptoms...Cathartics should not be given...If doubt exists as to whether the acute abdomen is present or not, that doubt should be cleared up by operation and not by delay. The mortality of the acute abdomen is the mortality of delay, ignorance and neglect."

Otto M. Faust, MD, in "Observation on Diastolic Blood Pressure," noted that 13 years previously Richard Cabot (of Boston) had written the first paper on human blood pressure. Since then, there had been thousands of articles on the topic, but most focused on systolic, not diastolic, readings. Dr. Faust reviewed 61 cases [from 1822 admissions, from January 1 – December 1, 1916] at Rhode Island Hospital. He looked at patients with chronic nephropathies and cardiopathies "on whom at least 1 blood pressure reading and 1 phthalein renal test was made." He included 9 cases of aortic regurgitation as well. He found "a definite relationship between diastolic pressure and functional capacity of the kidney, except in cases of aortic regurgitation."

An "Honor Roll" listed the Rhode Island physicians thus far to accept commissions in the Medical Reserve Corps, US Army, in the US Naval Reserve Force, or in the RI National Guard.

An Editorial, "Abrogate Patent on Salvarsan," reprinted a *JAMA* editorial (April 21, 1917), calling for abrogation, largely because "people who are supplying this product are charging prices that are exorbitant compared to the price at which others in this country can supply it." The cost for salvarsan was \$4.50; for an equivalent amount of arsenobenzol, \$2.00; and producers expected to drop the price to \$1.00 after the War.



FIFTY YEARS AGO, SEPTEMBER 1957

This issue advertised assorted drugs; e.g., preludin ("just 1 specific therapeutic purpose – to curb the appetite of the overweight patient"), pavartine with phenobarbitol (for "spasticity of the GI tract"), decholin (for "sluggish" older patients), neohydrin (an organomercurial diuretic), norlutin (an oral progestational agent), floraquin (for vaginal parasites).

J. Murray Beardsley, MD, in "Surgery of the Esophagus," described 9 cases from his operations at Rhode Island Hospital.

Donald L. DeNyse, MD, in "Clinical Observations with Phenaglycodol in Hypertension with Anxiety Status," selected 75 patients with mild hypertension and 36 with severe hypertension from a random sample seen over 10 months at Roger Williams Hospital. He found a "favorable" response with 92 patients, and found it "ideal in the 35 to 60 age group who showed mild to severe anxiety from the stress of modern life."

Domenic L. Coppolino, MD, and Francis P. Catanzaro, MD, in "Ingestion of Multiple Foreign Bodies," described a 55 year-old married woman admitted to St. Joseph's with a "chief complaint of repeated episodes of crampy abdominal pain." Tests revealed pieces of broken glass, as well as broken razor blades. She had a laparotomy, enterotomy and colostomy, and 1 piece of glass was removed manually from her rectum. When asked to explain, she said "I don't know," and also expressed anger at her husband.

TWENTY-FIVE YEARS AGO, SEPTEMBER 1982

Stanley M. Aronson, MD, and Renee R. Shield, MA, in "The Domain of the Elderly," explained: "The demographic data presented suggest numerous questions upon which research can be focused." The authors cited dependency ratios from different countries (ratio of people ages 15-64 to people ages 75 and older). In the United States and Western Europe, the ratio was 31 (the Rhode Island ratio was 23.1). In Asia the ratio was 75.

Alexander Leaf, MD, the Ridley Watts Professor of Preventive Medicine and Professor of Medicine, Harvard Medical School, delivered "Aging, Longevity, Prevention and Cure: Our Professional Failures," the 1981 Nathan J. Kiven MD Oration at The Miriam Hospital.

John W. McClain, PhD, David S. Greer, MD, and Donald L. Spence, PhD, contributed "The Promise of the Partnership," spelling out the role of the Gerontology Center at integrating the resources of the Brown Medical Program and several other agencies.

The Name of Choice in MRI



Open MRI of New England, Inc.

- Open-Sided and 1.5 Tesla High Field Systems
- Fast appointments and reports
- Instant internet access to studies
- Locations in Cumberland, East Providence, North Smithfield, Providence, Warwick & Westerly

Open MRI of New England, Inc.

ADVANCED Radiology, Inc.

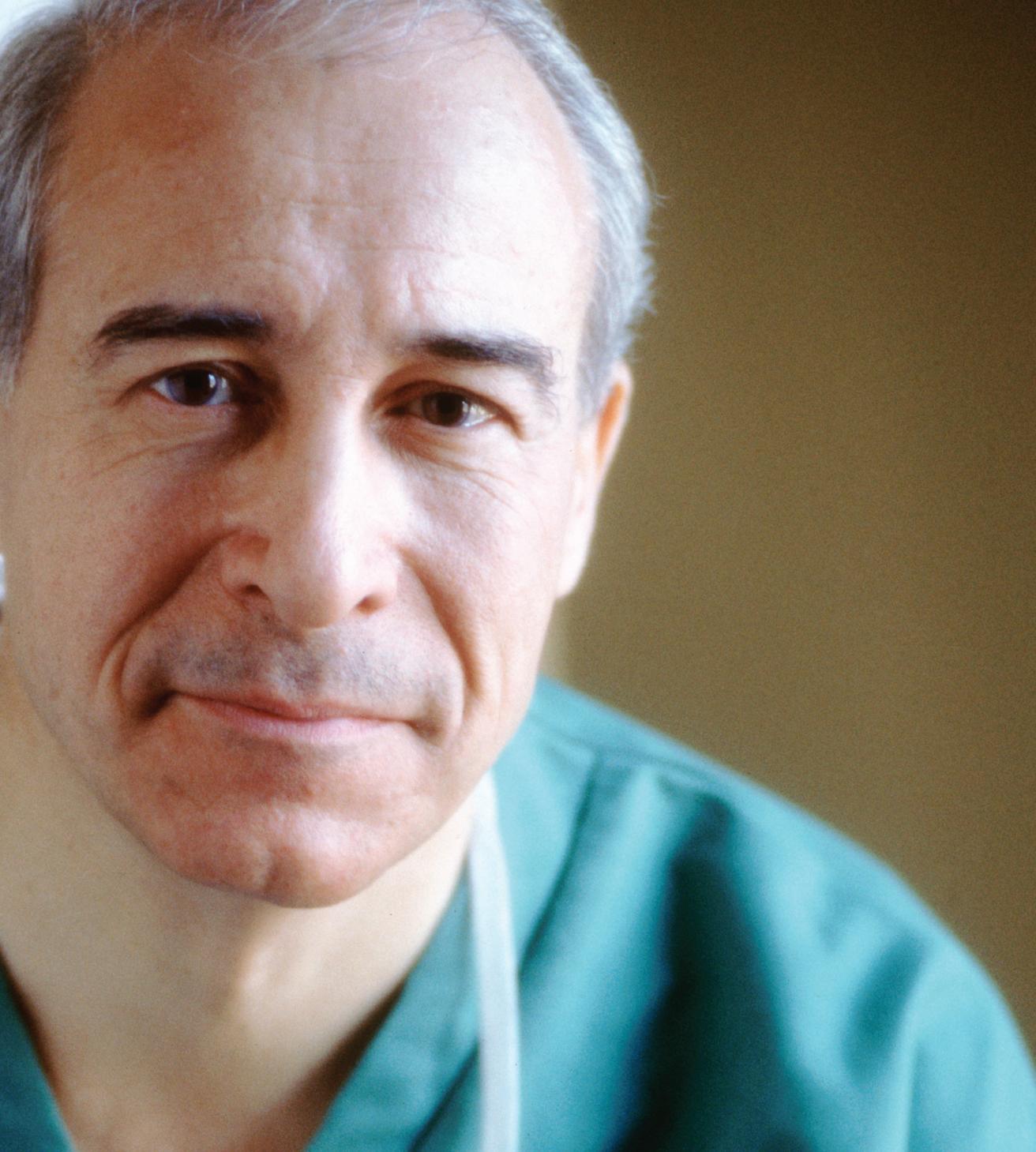
- "Multislice" CT systems by GE
- Digital xray, bone density and ultrasound
- Fast appointments and reports
- Instant internet access to studies



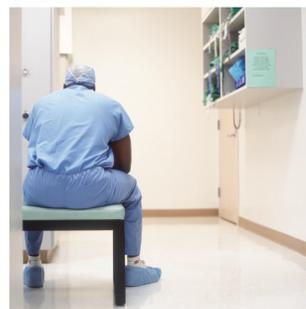
ADVANCED Radiology, Inc.

525 Broad St • Cumberland

Tel. 725-OPEN (6736) Fax 726-2536



integrity



whatdrivesyou?

**A commitment to excellence.
A passion for the art of medicine.
A basic desire to heal.**

Whatever it is that sustains you through the daily challenges of your profession, know that you have an ally in NORCAL.



(800) 652-1051 • www.norcalmutual.com

Call RIMS Insurance Brokerage Corporation at (401) 272-1050 to purchase NORCAL coverage.